

**COURSE STRUCTURE
AND
DETAILED SYLLABUS**

for

B.Tech – I - IV Year –

in

INFORMATION TECHNOLOGY

(IT)

(Applicable from the Academic Year 2010-2011)



SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY

(An Autonomous Institution approved by UGC and affiliated to JNTUH)

Yamnampet, Ghatkesar, R.R.District-501 301.

SREENIDHI INSTITUTE OF SCIENCE & TECHNOLOGY
(AUTONOMOUS)
B.Tech. Information Technology
1 YEAR COURSE STRUCTURE

S.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101EN01	English-I	3	-	-	3	30	70
2.	101MA01	Engineering Mathematics – I	3	1	-	3	30	70
3.	101PH01	Engineering Physics – I	3	1	-	3	30	70
4.	101CH01	Engineering Chemistry	2	1	-	2	30	70
5.	101IT01	Computer Programming	3	1	-	3	30	70
6.	101ME01	Engineering Drawing – I	2	-	4	4	30	70
7.	101EN71	English Language Lab – I	-	-	2	1	25	50
8.	101PH71	Engineering Physics –I	-	-	3/2	1	25	50
9.	101CH71	Engineering Chemistry Lab	-	-	3/2	1	25	50
10.	101IT71	Computer Programming Lab	-	-	3	2	25	50
11.	101ME71	Engineering Workshop – I	-	-	3/2	1	25	50
12.	101IT72	IT Workshop -I	-	-	3/2	1	25	50
Total :			16	4	15	25	330	720

I YEAR II SEMESTER COURSE STRUCTURE

S.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101EN02	English-II	2	-	-	2	30	70
2.	101MA03	Engineering Mathematics – II	3	1	-	3	30	70
3.	101PH02	Engineering Physics – II	3	1	-	3	30	70
4.	101CS01	Data Structures and C++	3	1	-	3	30	70
5.	101ME02	Engineering Drawing – II	1	-	2	2	30	70
6.	101EE41	Basic Electrical Engineering	3	1	-	3	30	70
7.	101ME04	Basic Mechanical Engineering	4	-	-	4	30	70
8.	101EN72	English Language Lab – II	-	-	2	1	25	50
9.	101CS71	Data structures and C++ Lab	-	-	3	2	25	50
10.	101PH72	Engineering Physics Lab-II	-	-	3/2	1	25	50
11.	101IT73	IT Workshop –II	-	-	3/2	1	25	50
Total :			19	4	10	25	310	690

II YEAR I SEMESTER COURSE STRUCTURE

Sl.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101MA07	Numerical Methods & Partial Differential Equations	3	1	-	3	30	70
2.	101EC06	Switching Theory and Logic Design	3	1	-	3	30	70
3.	101EC02	Basic Electronics for IT	3	1	-	3	30	70
4.	101CS03	OOP through Java	4	1	-	4	30	70
5.	101IT02	Mathematical Foundations of Computer Science	3	1	-	3	30	70
6.	101EM03	Computer Organisation	3	1	-	3	30	70
7.	101EN73	Functional and Communicative Written English	-	-	2	2	25	50
8.	101EE91	Basic Electrical Lab	-	-	3/2	1	25	50
9.	101EC84	Basic Electronics Lab	-	-	3/2	1	25	50
10.	101CS74	OOP through JAVA LAB	-	-	3	2	25	50
		Total :	19	6	8	25	280	620

II YEAR II SEMESTER COURSE STRUCTURE

Sl.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101CH03	Environmental Studies	3	1	-	3	30	70
2.	101MA10	Probability and Statistics	3	1	-	3	30	70
3.	101IT03	Data Base Management Systems	3	1	-	3	30	70
4.	101EC32	Data Communications	3	1	-	3	30	70
5.	101BT37	Human values, Ethics and IPR	2	-	-	2	30	70
6.	101EM09	Microprocessor and Interfacing	4	-	-	4	30	70
7.	101EM74	Effective English Communication and Soft Skills	-	-	2	2	25	50
8.	101IT74	Comprehensive viva-voce-I	-	-	-	1	-	50
9.	101IT75	Data Base Management Systems LAB	-	-	3	2	25	50
10.	101EM74	Microprocessor and Interfacing LAB	-	-	3	2	25	50
		Total :	18	4	8	25	255	620

III YEAR I SEMESTER COURSE STRUCTURE

S.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101CS07	Operating Systems	3	1	-	3	30	70
2.	101IT04	Design and Analysis of Algorithms	3	-	-	3	30	70
3.	101CS05	Computer Networks	3	1	-	3	30	70
4.	101IT05	Datawarehousing and Data Mining	3	1	-	3	30	70
5.	101CS08	Automata and Compiler Design	3	1	-	3	30	70
6.	101IT06	Computer Graphics	3	1	-	3	30	70
7.	101MA71	Logical Reasoning	-	-	2	2	25	50
8.	101IT76	Group Project	-	-	3	1	25	50
9.	101CS87	Operating systems and Computer Networks Lab	-	-	3	2	25	50
10.	101IT77	Datawarehousing and Data Mining Lab	-	-	3	2	25	50
Total :			18	5	11	25	280	620

III YEAR II SEMESTER COURSE STRUCTURE

S.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101MB01	Managerial Economics & Financial Analysis	3	1	-	3	30	70
2.		Open Elective - I	2	1	-	2	30	70
3.	101IT07	Shell Programming & Scripting Language	4	1	-	4	30	70
4.	101CS04	Software Engineering	3	1	-	3	30	70
5.	101CS06	Object Oriented Analysis & Design	3	1	-	3	30	70
6.		Professional Elective – I	3	1	-	3	30	70
7.	101MA72	Quantitative Aptitude – I	-	-	2	2	25	50
8.	101IT78	Comprehensive Viva-Voce - II	-	-	-	1	-	50
9.	101CS76	Object Oriented Analysis & Design Lab	-	-	3	2	25	50
10.	101IT79	Shell Programming & Scripting Language LAB	-	-	3	2	25	50
Total :			18	6	8	25	255	620

S.No	Code	Open Elective - I
1.	101FL01	Spanish
2.	101FL02	French
3.	101FL03	German

S.No	Code	Professional Elective – I
1.	101EM10	.Embedded Systems
2.	101CS18	Advanced Computer Architecture
3.	101IT08	Middle Ware Technologies

IV YEAR I SEMESTER COURSE STRUCTURE

Sl.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101MB02	Management Science	3	1	-	3	30	70
2.		Open Elective - II	3	-	-	3	30	70
3.	101CS16	Mobile Computing	3	1	-	3	30	70
4.	101CS09	Software Quality Assurance and Testing	3	1	-	3	30	70
5.	101IT09	Web Technologies	3	1	-	3	30	70
6.		Professional Elective - II	3	1	-	3	30	70
7.	101MA73	Logical Reasoning (LR – II)	-	-	2	2	25	50
8.	101IT80	Pre – Project Seminar	-	-	-	2	50	-
9.	101IT81	Industry Oriented Mini Project	-	-	-	2	25	50
9.	101CS79	Software Testing Lab	-	-	3	2	25	50
10	101IT82	Web Technologies Lab	-	-	3	2	25	50
			18	5	6	28	330	620

Sl.No	Code	Open Elective - II
1.	101MB04	Banking Operations
2.	101MB05	Insurance Operations
		One of Two subject to be added at the time of starting of Semester

Sl.No	Code	Professional Elective - II
1.	101CS12	Software Project Management
2.	101IT10	Neural Networks Fuzzy Logic
3.	101IT11	Information Security

IV YEAR II SEMESTER COURSE STRUCTURE

Sl.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101IT15	Network Protocols	4	-	-	4	30	70
2.		Professional Elective – III	4	-	-	4	30	70
3.	101IT83	PROJECT	-	-	-	10	50	150
4.	101IT84	Comprehensive Viva-Voce - III	-	-	-	2	-	50
5.	101IT85	Technical Seminar	-	-	-	2	25	-
		Total :	8	-	-	22	135	340

Sl.No	Code	Professional Elective – III
1.	101IT12	Image Processing
2.	101IT13	E – Commerce
3.	101IT14	Multimedia
4.	101CS20	Network Management System

NOTE:

All the end examinations (Theory and Practical) are of three hours duration.

L-Theory**T-Tutorial****P-Practical/Drawing****C-Credits**

Syllabus for B. Tech. I Year I semester
English – I
(A Communicative Approach)
 (Common to all branches)

Code: 101EN01

L	T	P/D	C
3	-	-	3

UNIT I: NOBLE THOUGHT

1. Reading : The Last Leaf – O. Henry
2. Writing : Paragraph writing
3. Listening : Listening for sounds
4. Speaking : Greeting, taking leave and introducing
5. Grammar : Naming words
6. Vocabulary : Homonyms, homophones, homographs, synonyms and antonyms

UNIT II: BIOGRAPHY

1. Reading : Sri C.V. Raman- Shubashree Desikan
2. Writing : Work-related correspondence
3. Listening : Listening for words
4. Speaking : Making requests
5. Grammar : Naming words specific (Part I)
6. Vocabulary : Word Formation

UNIT III: HUMAN INTEREST

1. Reading : The Connoisseur- Nergis Dalal
2. Writing : Summarizing
3. Listening : Listening for word stress
4. Speaking : Apologizing and inviting
5. Grammar : Making naming words specific (part 2)
6. Vocabulary : Collocations

UNIT IV: DISASTER MANAGEMENT

1. Reading : The Cuddalore Experience-Anu George
2. Writing : Basics of Essay Writing
3. Listening : Listening for theme
4. Speaking : Congratulating, offering sympathy, condolences and making complaints
5. Grammar : Tenses
6. Vocabulary : Phrasal verbs

UNIT V: HUMOUR

1. Reading : The Luncheon – Somerset Maugham
2. Writing : Note making
3. Listening : Listening for details and taking notes
4. Speaking : Interview skills
5. Grammar : Adverbials and modal verbs
6. Vocabulary : Idioms

UNIT VI: Outlook

1. Reading : Indian Crowds – Nirad C. Choudhary
2. Writing : Information transfer
3. Listening : Listening to announcements and directions
4. Speaking : Making presentations
5. Grammar : Conjunctions and prepositions
6. Vocabulary : Business vocabulary

Text Books:

- Enjoying Everyday English : A Rama Krishna Rao, Sangam Books, HYD.

References:

- Business Vocabulary In Use -Bill Mascull, Cambridge University Press.
- How to build a better vocabulary –Nurnberg Maxwell & Morris Rosenblum: Grand Central Publishers
- Six weeks to words of power –Funk Wilfred: W.R.Goyal Publishers & Distributors
- Word power made easy – Norman Lewis, W.R.Goyal Publishers.
- How to read better and faster: Norman Lewis, W.R.Goyal Publishers, New Delhi

Syllabus for B. Tech. I Year I semester
ENGINEERING MATHEMATICS – I
 (Common to all branches)

Code: 101MA01

L	T	P/D	C
3	1	-	3

UNIT-I

Matrix Theory-I: Elementary row and column operations on a matrix, rank of a matrix, normal form, Inverse of a matrix using elementary operations, consistency and solutions of systems of linear equations using elementary operations.. Linear dependence and independence of vectors,

UNIT-II

Matrix Theory-II Characteristic roots and vectors of a matrix, properties of Eigen values and Eigen Vectors, Caley-Hamilton theorem and its applications, reduction to diagonal form, quadratic and canonical forms.

UNIT-III**Sequences and series & Mean value theorems**

Sequences and series- Convergence and divergence – Comparison test – integral test – Cauchy root test – Ratio test – Raabe's test – Log test – Absolute and conditional convergence. Rolle's Theorem, Mean value theorems (Without Proof) – Taylor's and Maclaurin's theorems with out remainders, expansions.

UNIT-IV**Functions of several variables & partial differentiation**

Functions of several variables, partial differentiation, total differentiation, Euler's theorem and generalization, Jacobians and its properties, Maxima and Minima of functions of several variables (two and three variables), Lagrange's method of multipliers ,

UNIT-V

Radius of curvature Cartesian, Parametric and polar forms .Radius of curvature at origin., center of curvature, evolutes, envelopes.

UNIT-VI

Curve Tracing & Multiple integrals :curve tracing- Cartesian ,parametric and polar forms. Length of curves, Double and triple integrals, change of variables in double integrals.

Text Books:

1. Higher Engineering Mathematics, B.S. Grewal , Khanna Publications, New Delhi.
2. Engineering Mathematics, B.V.Ramana, Tata McGraw Hill Publishing Company Ltd.

References:

1. A text Book of KREYSZIG's Engineering Mathematics, Dr. A. Ramakrishna Prasad, Wiley Publications
2. A Text book of Engineering Mathematics,M.Venkata Krishna, Jaico Publishing House,2010.
3. Jain, S.R.K, Advanced Engineering Mathematics, Narosa Publishing House, London 2002.

**Syllabus for B. Tech. I Year I semester
Information Technology**

Code: 101PH01

ENGINEERING PHYSICS – 1

(Common to all branches)

L	T	P/D	C
3	1	-	3

UNIT - I

Crystallography and Crystal Structures: Space Lattice, Unit Cell, Lattice Parameters, Crystal Systems, Bravais Lattices, Miller Indices, Crystal Planes and Directions, Inter Planar Spacing of Orthogonal Crystal Systems, Atomic Radius, Co-ordination Number and Packing Factor of SC, BCC, FCC, Diamond and hcp Structures, Structures of NaCl, ZnS, CsCl.

UNIT-II

X-ray Diffraction: Basic Principles, Bragg's Law, Laue Method, Powder Method, Applications of X-ray Diffraction.

Defects in Crystals: Point Defects: Vacancies, Substitutional, Interstitial, Frenkel and Schottky Defects; Qualitative treatment of line (Edge and Screw Dislocations) Defects, Burger's Vector, Surface Defects and Volume Defects.

UNIT- III

Elements of Statistical Mechanics: Phase space, Ensemble, Difference between micro, canonical & grand canonical ensemble, Maxwell - Boltzman Statistics, Bose – Einstein Statistics, Fermi – Dirac Statistics with derivations.

UNIT-IV

Free electron theory of Metals: Classical free electron theory (Drunde and Lorentz), Electrical conductivity of a metals, Relaxation time, Collision time and mean free path, Success of classical free electron theory, Breakdown of free electron theory, Fermi – Dirac distribution function- variation with temperature, The quantum free electron theory.

UNIT-V

Principles of Quantum Mechanics: Waves and Particles, de Broglie Hypothesis , Matter Waves, Davisson and Germer's Experiment, G. P. Thomson Experiment, Heisenberg's Uncertainty Principle, Schrödinger's Time Independent Wave Equation -Physical Significance of the Wave Function -Particle in One Dimensional Potential Box.

UNIT-VI

Band Theory of Solids: Bloch Theorem, Kronig-Penny Model (Qualitative Treatment), Origin of Energy Band Formation in Solids, Classification of Materials into Conductors, Semi Conductors & Insulators.

Text Books:

1. Introduction to Solid State Physics, by Charles Kittel
2. Engineering Physics P K Palanisamy

References :

1. Solid State Physics Neil by W. Ashcroft , N. David Mermin
2. Statistical Mechanics by Donald Allan McQuarrie
3. Statistical Mechanics by Sathya Prakash
4. Quantum Mechanics by John L Powel
5. Principles of quantum Mechanics by Ramamurti Shanker
6. Applied Physics by M Chandrashekar and P Appa Naidu
7. Modern Engineering Physics by K. Vijaya Kumar, S Chandralingam

**Syllabus for B. Tech. I Year I semester
Information Technology
ENGINEERING CHEMISTRY
(Common to all Branches)**

Code: 101CH01

L	T	P/D	C
2	1	-	2

UNIT-I: Water Technology

Hardness-temporary and permanent hardness. Units and inter conversions of Units. Estimation of Hardness; EDTA method Analysis of water – Alkalinity. Water Treatment: Internal treatment, External treatment – Lime – Soda Process, Zeolite Process, Ion-Exchange Process – Numerical Problems Lime – Soda Process.

UNIT II: Electrochemistry

Conductance-types, Electrolytic conductance-specific, equivalent and molar conductance, ionic conductance, ionic mobilities, Kohlrausch's law and its applications. EMF: Galvanic Cells, types of Electrodes, Reference Electrode (SCE), Redox electrode (Quinhydrone electrode), Ion Selective Electrodes (Glass Electrode) Nernst equation and its applications, Potentiometric titrations, Numerical problems.

Batteries: Primary and secondary cells, (Ni-Cd cell, Lithium ion cells, lead-Acid cell.). Applications of batteries, Fuel cells – Hydrogen – Oxygen fuel cell, Advantages of fuel cells.

UNIT III: Corrosion and its Control

Definition of corrosion, oxidation corrosion, mechanism of oxidation corrosion, electrochemical corrosion, mechanism of electrochemical corrosion, formation of anodic and cathodic areas, galvanic corrosion, waterline corrosion, soil corrosion, Factors affecting rate of corrosion control. Cathodic protection: Sacrificial anodic protection method, impressed current protection method, Protective coatings-metallic coatings, electroplating, Organic surface coatings – paints constituents and functions.

UNIT-IV: Phase Rule and Adsorption

Phase rule- Definition and terminology, Application of phase rule to Water system and Ag-Pb system.

Adsorption: Definition, types, Adsorption of gases on solids, Langmuir adsorption isotherm, BET adsorption equilibrium.

UNIT – V: Polymer Technology

Polymers, terminology, Polymerization- Types of Polymerization – Addition and Condensation and Co-Polymerization. Plastics – Thermosetting and Thermoplastics – Preparation, Properties and applications of the following: PVC, Teflon, Bakelite, Nylon 6:6, Polyester and Dacron.

Rubber-natural and artificial rubber, Vulcanization of natural rubber, Buna S, Buna N, Thiokol.

Conducting Polymers: Poly acetylene, polyaniline and their applications.

UNIT-VI: Fuels and Lubricants

Fuels: Classification- Characteristics of a good fuel, **Calorific value:** gross calorific value, net calorific value, determination of calorific values by bomb calorimeter.

Solid fuels: Coal, analysis of coal - proximate analysis and ultimate analysis

Liquid fuels: Petroleum –Refining, fractional distillation of crude oil, octane number, cetane number.

Gaseous fuels: Advantages of gaseous fuels, analysis of flue gases – Orsat's apparatus

Lubricants: Functions of Lubricants – Types of Lubrication and Mechanism – Thick Film or Hydrodynamic Lubrication. Thin Film or Boundary Lubrication. Extreme pressure lubrication, Classification and Properties of Lubricants.

Text Books:

1. Engineering Chemistry: P.K. Jain and M.K. Jain, Dhanpathrai Publications – 14th Edition.
2. Text Book of Engineering Chemistry – Shashi Chawla, Dhanpat Rai publishing Company, New Delhi (2008).

References:

1. Essentials of Physical chemistry; Baul & Tuli; S. Chand Publications.
2. Text of Engineering Chemistry by S.S. Dara & Mukkati S. Chand & Co, New Delhi (2006)
3. Chemistry of Engineering Materials by CV Agarwal, C.P Murthy, A. Naidu, BS Publications.
4. Engineering Chemistry by R. P. Mani, K. N. Krishna B. Rama Devi Cengage Learning New Delhi (2010).
5. Engineering Chemistry by Shiva Shnakar Tata McGraw Hill (2010).

**Syllabus for B. Tech. I Year I semester
Information Technology
COMPUTER PROGRAMMING
(Common to all Branches)**

Code: 101IT01

L	T	P/D	C
3	1	-	3

UNIT – I

Computer fundamentals – Computer architecture (block diagram), CPU, Memory, Types of memory, I/O devices.

Software Development Steps - Algorithms, pseudo code, flowcharts, Software Development Life Cycle.

UNIT – II

C fundamentals – History of C Language, Features of C, Structure of C, Character set, identifiers, constants, variables and keywords.

Simple data types – char, int, float, double. Data type modifiers and qualifiers. Memory allocation for these types.

Operators – Unary, binary and ternary, precedence and association rules among operators. **Decision control structures** – if..else, dangling else, switch statement.

Repetitive control structures - while, do..while, for, break and continue statements, Nested structures.

UNIT – III

Functions – Function definition, arguments, return value, prototype, arguments and parameters.

Parameter passing – Call by value and call by reference.

Recursive functions – Definition, examples, advantages and disadvantages.

Macros – Definition, examples, comparison with functions.

Arrays – Definition, initialization, strings as character arrays, two dimensional and multidimensional arrays. Passing arrays as arguments to functions.

UNIT – IV

Pointers – Definition, Pointer variable, Pointer to a pointer, Memory mapping, arithmetic operations on pointers, relationship between arrays and pointers, pointers as arguments and return type of a function, pointers to a function, array of pointers and pointers to arrays, dynamic memory allocation.

Strings – Input output functions, string handling functions.

Structures – Declaring a structure, array of structures, nested structures, unions, passing structures as arguments to a function and structure as a return type of a function.

UNIT – V

Files – Data Organization, file operations, file opening modes, creating, storing, retrieving, appending, editing, copying files, Examples illustrating counting characters, tabs, spaces, string (line) I/O in files, record I/O in files, text files and binary files, command line arguments, error handling functions in files random access files.

UNIT – VI

Applications – Case study of simple bank transactions and program development.

Preprocessor directives – Macro expansion, file inclusion, condition compilation, miscellaneous directives.

Graphics in C – Line drawing, Rectangle, ellipse, working with image, move to function, and graphic related library functions.

Text Books:

- * Computer science, A structured programming approach using C, B.A. Forouzan and R.F. Gilberg, Third edition, Thomson.
- * The C Programming Language, B.W. Kernighan, Dennis M.Ritchie, PHI/Pearson Education.

References:

- * Let us C by Yashwanth P. Kanetkar 8th edition BPB publications.
- * Understanding pointers in C by Yashwanth P. Kanetkar.
- * Computer programming for teens by Mary Farrell.
- * Working with C by Yashwanth P. Kanetkar.
- * Graphics under C by Yashwanth P. Kanetkar.
- * The complete reference, 4th edition, Herbert Schmidt.
- * C Faqs by Steve Summit.

**Syllabus for B. Tech. I Year I semester
Information Technology
ENGINEERING DRAWING-I**

Code: 101ME01

L	T	P/D	C
2	-	4	4

UNIT – I

INTRODUCTION TO ENGINEERING DRAWING: Drawing Instrument and their use Types of lines, use of pencils, Lettering, Rules of dimensioning.

Construction of polygons: Inscription and superscription of polygons given the diameter

SCALES: Scales used in Engineering Practice and Representative Fraction – construction of Plain, diagonal, Vernier Scales.

Curves used in Engineering Practice and their Constructions.

- a) Conic Sections including the Rectangular Hyperbola-General method only.
- b) Cycloid, Epicycloid and Hypocycloid
- c) Involute

UNIT – II

DRAWING OF PROJECTIONS OR VIEWS ORTHOGRAPHIC PROJECTION IN FIRST ANGLE

PROJECTION ONLY: Principles of Orthographic Projections – Conventions – First and Third Angle Projections, Projection of Points, Projection of Lines - inclined to both planes, True lengths, traces.

UNIT – III

PROJECTIONS OF PLANES: Projections of regular Planes, Traces, Oblique planes. Introduction to Auxiliary planes

UNIT –IV

PROJECTIONS OF SOLIDS:

Projections of Regular Solids – Regular Polyhedra, solids of revolution, Axis inclined to both planes – Alteration of position and Auxiliary plane method.

UNIT –V

SECTIONS OF SOLIDS:

Sections and Sectional views of Right Regular Solids – Prism, Cylinder, Pyramid, Cone – Auxiliary views

UNIT –VI

DEVELOPMENT OF SURFACES:

Development of Surfaces of Right Regular Solids – Prisms, Cylinder, Pyramid Cone and their parts

TEXT BOOKS:

1. Engineering Drawing, N.D. Bhat / Charotar
2. Engineering Drawing, Narayana and Kannaiah / Scietech publishers.

REFERENCES:

1. Engineering Drawing, K.Venugopal/G.Sreekanjana, New Age International Publishers.

**Syllabus for B. Tech. I Year I semester
Information Technology
ENGLISH LANGUAGE LAB-I**

Code: 101EN71

L	T	P/D	C
-	-	2	1

Introduction:

The Language Lab focuses on the production and practice of sounds of language and familiarizes the students with the use of English in everyday situations and contexts.

Objectives:

1. To expose the students to a variety of self-instructional, learner-friendly modes of language learning.
2. To help the students cultivate the habit of reading passages from the computer monitor, thus providing them with the required facility to face computer-based competitive exams such as GRE, TOEFL, GMAT etc.
3. To enable them to learn better pronunciation through stress on word accent, intonation, and rhythm.
4. To train them to use language effectively to face interviews, group discussions, public speaking.
5. To initiate them into greater use of the computer in resume preparation, report writing, format-making etc.

Syllabus:

The following course content is prescribed for the English Language Laboratory sessions.

1. Introduction to the Sounds of English – Vowels, Diphthongs & Consonants.
2. Introduction to Stress and Intonation.
3. Situational Dialogues/Role Play
4. Oral Presentations-Prepared and Extempore
5. 'Just A Minute' Sessions (JAM)
6. Describing Objects/Situations/People
7. Information Transfer
8. Debate

Minimum Lab Requirements:

The English Language Lab shall have two parts.

- i) The Computer aided Language Lab for 60 students with 60 systems, one master console. LAN facility and English language software for self-study by learners.
- ii) The Communication Skills Lab with movable chairs and audio-visual aids with a P.A. System, a T.V., a digital stereo-audio & video system and camcorder etc.

System Requirement (Hardware component)

Computer network with LAN with minimum 60 multimedia systems with the following specifications:

- 1) P-IV Processor
 - a) Speed – 2.8 GHZ
 - b) RAM -512 MB Minimum
 - c) Hard Disk – 80 GB
- 2) Headphones of High quality

Software:

- * Pro Power Pronunciation Software
- * Hi Class system Monitoring Software.
- * A.P.State Council of Higher Education Software (Foundation Course in communication skills)
- * Face to Face elementary and Pre –intermediate CDs.
- * Cambridge Advanced Learners' English Dictionary with CD
- * Learn to speak English book + CD set. (Set of 4 CDs)
- * Mastering English (CD).
- * DOKI English CD

REFERENCES

1. English Conversation Practice by Grant Taylor, Tata Mc.Graw Hill
2. Speaking Effectively, Cambridge University Press
3. A text book of English Phonetics for Indian Students by T. Balasubramanian Mac Millan

**Syllabus for B. Tech. I Year I sem
Information Technology
ENGINEERING PHYSICS –I**

Code: 101PH71

L	T	P/D	C
-	-	3/2	1

1. Calculation of error - Error estimation.
2. Determination of wavelength of a given laser source of light by using diffraction Grating.
3. To find the frequency of a Tuning fork - Melde's Experiment.
4. To find the frequency of ac signal generator - A.C. Sonometer.
5. Electrical conductivity of a given material
6. To study the Characteristics of a Thermistor.
7. R.C. Network.
8. L.C.R. series and parallel resonance.
9. Energy gap of a semiconductor
10. Planck's constant

Code: 101CH71

**Syllabus for B. Tech. I Year I sem
Information Technology
ENGINEERING CHEMISTRY**

L	T	P/D	C
-	-	3/2	1

1. Estimation of MnO_2 in Pyrolusite.
2. Estimation of Hardness of water.
3. Estimation of Mn^{+2} / Cu^{+2} ions by colorimetry.
4. Estimation of acid by conductometric titrations.
5. Estimation of acid by potentiometric titrations.
6. Determination of viscosity.
7. a) Preparation of Aspirin
b) Preparation of Polymer (Thiokol rubber).
8. Determination of Flash and Fire point of a fuel using Abel's / Pensky – Martin's Apparatus.
9. Determination of Calorific value of a solid fuel by Bomb Colorimeter.
10. Green penetration Test.

Syllabus for B. Tech. I Year I sem
Information Technology
COMPUTER PROGRAMMING LAB

Code: 10IT71

L	T	P/D	C
-	-	3	2

1. Unit I (Cycle 1)

1. Write an algorithm for converting a given Celsius temperature to its equivalent Fahrenheit temperature and draw a flowchart using RAPTOR tool and test it using the data: 0⁰C, 35⁰C, 55.35⁰C, and 100⁰C.
2. Write an algorithm to find the largest of three given numbers and draw a flowchart using RAPTOR tool and test it for data: (5, 7, 2), (3.5, 5.8, 9.2), (112, 19.6, 82.7).
3. Write an algorithm and draw a flowchart for finding the roots and nature of roots of a quadratic equation, given its coefficients and test it for data: (1, 3, 2), (2, 1, 6), (6, 5, 1).

2. Unit I (Cycle 2)

1. Write an algorithm and draw a flowchart for computing the sum of the digits of a given integer and test it for the data: 3259, 89725, 10092.
2. Write an algorithm and draw a flowchart to test whether a given integer is a prime number or not. Test for the data: 29, 35, 89.
3. Write an algorithm and flowchart for printing the first n Fibonacci numbers, give n. Test using the data: 10, 25, 50.

3. Unit II (Cycle 3)

1. Write an algorithm, flowchart, and C program for:
 1. Finding the area and circumference of a circle of given radius.
 2. Finding the volume of a sphere of given radius.
 3. Finding the lateral surface area of a right circular cone of given base radius and height.
 4. Finding selling price of an item, given its cost price and profit percent.
 5. Finding the interest on a given principal for a given period of time at a given rate of per year.
2. Write a C program to display all the sizes of data types in C.
3. Write a C program to display a given decimal integer into an equivalent octal number and hexadecimal number.

4. Unit II (Cycle 4)

1. Write a C program to find the roots and nature of the roots of a quadratic equation, given its coefficients.
2. Write a C program for finding the largest of three given numbers.
3. A salesman gets a commission of 5% on the sales he makes if his sales is below Rs.5000/- and a commission of 8% on the sales that exceeds Rs.5000/- together with Rs.250/-. Write an algorithm or a flowchart and develop C program for computing the commission of the salesman, given his sales.

5. Unit II (Cycle 5)

1. Write a program that reads a letter given by the user and prints whether it is a vowel or not.
2. An institution gives grades to its students as follows:
 - a. Grade A if he gets 80 or more marks
 - b. Grade B if he gets between 60 and 79 (both inclusive)
 - c. Grade C if he gets between 50 and 59 (both inclusive)
 - d. Grade D if he gets between 40 and 49 (both inclusive)
 - e. Grade F otherwise.
 Marks of student are always an integer ranging from 0 to 100. Use case structure to print the grade obtained by the candidate, given his marks.
3. Write three C programs to print a multiplication table for a given number using while, do..while, and for loops.

6. Unit II (Cycle 6)

1. Write a C program to compute the sum of:
 1. $1+x+x^2+x^3+\dots+x^n$, given x and n.
 2. $1! + 2! + 3! + \dots + n!$, given n.
 3. $1 - x^2/2! + x^4/4! - x^6/6! + x^8/8! - x^{10}/10! + \dots$ to n terms where the nth term becomes less than 0.0001.

2. Write a C program in the menu driven style to perform the operations +, -, *, /, % between two given integers.
3. Write a C program to find the largest and the least of some numbers given by the user.
7. **Unit III (Cycle 7)**
 1. Write C functions for the following:
 1. A function that takes an integer n as argument and returns 1 if it is a prime number and 0 otherwise.
 2. A function that takes a real number x and a positive integer n as arguments and returns x^n .
 3. A function that takes a positive integer n as an argument and returns the n^{th} Fibonacci number.
 2. Using recursion write C functions for the following:
 1. Factorial of a non-negative integer n.
 2. Number of combinations of n things taken r at a time.
 3. Greatest Common Divisor of two integers.
 4. Least Common Multiple of two integers.
8. **Unit III (Cycle 8)**
 1. Write a menu driven style program to compute the above functions (cycle 7) on the choice of the function given by the user.
 2. Write a C program to solve the problem of Towers of Hanoi.
 3. Write a program to generate Pascal's triangle.
 4. Write a program to count the number of letters, words, and lines in a given text.
9. **Unit III (Cycle 9)**
 1. Write a program to store the numbers given by the user in an array, and then to find the mean, deviations of the given values from the mean, and variance.
 2. Write a C program to initially store user given numbers in an array, display them and then to insert a given number at a given location and to delete a number at a given location.
 3. Write a program to store user given numbers in an array and find the locations of minimum and maximum values in the array and swap them and display the resulting array.
 4. Define macros for the following and use them to find sum of the squares of the minimum and maximum of two given numbers.
 1. Larger of two numbers.
 2. Smaller of two numbers.
 3. Sum of the squares of two numbers.
10. **Unit IV (Cycle 10)**
 1. Write a function to swap two numbers.
 2. Write a function to compute area and circumference of a circle, having area and circumference as pointer arguments and radius as an ordinary argument.
 3. Write a C program to implement the operations of matrices – addition, subtraction, multiplication.
 4. Write a program to find whether a given matrix is symmetric, lower triangular, upper triangular, diagonal, scalar, or unit matrix.
11. **Unit IV (Cycle 11)**
 1. Define a structure for complex number. Write functions on complex numbers (addition, subtraction, absolute value, multiplication, division, complex conjugate) and implement them in a menu driven style.
 2. Define a structure point. Write a program to find the distance between two points.
12. **Unit IV (Cycle 12)**
 1. Define a structure student having members roll no., name, class, section, marks. Create an array of 10 students give the data and find the average marks, section-wise.
 2. Define functions – length of the string, copy, concatenate, convert into upper case letters, compare two strings for alphabetical order – over strings and implement them in a program.
13. **Unit V (Cycle 13)**
 1. Write a program to:
 1. Create a file by the name given by the user or by command line argument and add the text given by the user to that file.
 2. Open the file created above and display the contents of the file.
 3. Copy a file into some other file, file names given by the user or by command line arguments.
 4. Append a user mentioned file to another file.
 5. Reverse the first n characters of a file.
14. **Unit V (Cycle 14)**
 1. Store the marks of the students of a class into file and the display the results as per the rules of your institution.

2. In the above file search a student by roll no. and display the particulars.
15. **Unit VI (Cycle 15)**
1. Write a program to draw figure of your liking with appropriate colors.
 2. Write a program to implement simple bank transactions – opening an account, closing an account, deposit money into an account, withdraw money from an account, maintaining the customer database, and daybook.

**Syllabus for B. Tech. I Year I semester
Information Technology
ENGINEERING WORKSHOP-I**

Code: 101ME71

	L	T	P/D	C
ENGINEERING WORKSHOP-I	-	-	3/2	1

1. House Wiring

- To connect the Tube Light as per circuit diagram
- To connect the Calling Bell as per circuit diagram

2. Home Appliances

Study of circuits and systems used in various home appliances such as Fans, Mixers, Washing machines etc.,

3. Welding

- To prepare a Lap Joint
- To prepare a Butt Joint

4. Machine Shop (demonstration)

Operations performed on Lathe, Drilling, Milling and grinding machines

**Syllabus for B. Tech. I Year I semester
Information Technology
IT WORKSHOP-I**

Code: 101IT72

L	T	P/D	C
-	-	3/2	1

IT WORKSHOP-I

Week 1 : Introduction to computers, identify the peripherals of a computers, componenets in a CPU & its functions, draw the block diagram of the cpu along with the configuration of each peripherals.

Week 2 : disassemble & assemble the PC back to working condition [video, manual], Hardware troubleshooting.

Week 3 Introducton to operating system [Basics], Installation of Windows XP.

Week 4 : DOS (Internal & External) commands, work on that commands, comparisions of windows & open source OS.

Week 5 :Installation of Linux O.S [Advanced debian, ubuntu], Basic Linux Commands, work on that commands.

Week 6 : Software troubleshooting, Identify the system software problems & fix it to get the computer back to working conditions.

Cyber Hygeine : Installation of Antivirus software, Configure their personal firewall & windows update on their computer, customize the browsers to block POP UPS, block active x downloads to avoid viruses and worms.

Week 7 : Introduction to Internet & LAN

Browsing the Net : Connect the LAN and access the Internet, Know how to acces the websites and email.

Search Engines:

Introduction to search engines, types of search engines, uses of search engines, how to use search engine. Give few topics to students for which they need to search on GOOGLE.

Syllabus for B. Tech. I Year II sem
Information Technology
ENGLISH – II
(English Language Teaching Through Literature)

Code: 101EN02

L	T	P/D	C
2	-	-	2

UNIT – I

1. Speech : Swami Vivekananda
2. Short Story : The Lottery Ticket: Anton Chekhov
3. Letter Writing

UNIT – II

1. Speech : Polonious Speech –An extract from
Shakespeare's *Hamlet*
2. Short S : Ha' Penny – Alan Paton
3. Sentence Construction

UNIT – III

1. Biography : Sam Pitroda
2. Short Story : Subha – Rabindranath Tagore
3. Letter : Abraham Lincoln's Letter to His Son's Teacher

UNIT – IV

1. Biography : Mother Theresa
2. Short Story : The Only American From Our Village by
Arun Joshi
3. Note-Making

UNIT – V

1. Poem : The Gift of India – Sarojini Naidu
2. Short story : Diamond Rice - Ranga Rao S.S
3. Analogies

UNIT – VI

1. Poem : La Belle Dame sans Merci – John Keats
2. Short Story : Luck – Mark Twain
3. Reading Comprehension

Text Books:

1. Inspiring Speeches and Lives; B. Yadava Raju, Maruthi Publications, Guntur.
2. Vignettes of Life (A collection of short stories by T. Padma), McMillan India Ltd.

Reference Books:

1. Barron's TOEFL; Barron, Galgotias Publication Pvt. Ltd.
2. A Modern Approach to Verbal And Non Verbal Reasoning – R S Aggarwal, S.Chand Publications.

**Syllabus for B. Tech. I Year II semester
Information Technology**

Code: 101MA03

ENGINEERING MATHEMATICS – II

L	T	P/D	C
3	1	-	3

UNIT-I

Ordinary Differential Equations Of First Order: Differential equations of first order and first degree – Exact, linear and Bernoulli equations. Applications to geometry, law of natural growth and decay and Newton’s law of cooling, electrical circuits, Orthogonal Trajectories.

UNIT-II

Ordinary Linear Differential Equations Of Higher Order: Linear differential equations of second and higher orders with constants coefficients – Method of variation of parameters – Systems of linear differential equations with constant coefficients – Applications: Bending of beams, electrical circuits, Simple harmonic motion.

UNIT-III

Laplace Transformations Laplace Transformations – Laplace transform, Shifting theorems, Multiplication by powers of t, Division by t, Laplace transform of Unit Step function, Impulse function, and periodic functions.

Inverse Laplace transforms Inverse Laplace transform, Shifting theorems, Partial fraction method, convolution theorem (without proof), solutions of ordinary differential equations with constant coefficients and systems of linear differential equations with constant coefficients using Laplace transformations.

UNIT-IV

Z- transforms : Z- transforms – Inverse Z- transforms – properties – Damping rule – Shifting rules – Initial and final value theorems – Convolution theorem – Solution of difference equation by Z- transforms

UNIT-V

Fourier series Fourier series – Even and Odd functions – Fourier series in an arbitrary interval – Half-range Fourier sine and cosine series

UNIT-VI

Vector Calculus- Scalar and vector fields, vector differentiation, level surfaces, directional derivative, gradient of a scalar field, divergence and curl of a vector field, Laplacian operator and related properties.

Line and surface integrals, Green’s theorem in plane, Gauss-Divergence theorem, Stoke’s theorem and verification of problems (without proof).

Text Books:

- Higher Engineering Mathematics, B.S. Grewal, Khanna Publications, New Delhi.
- Engineering Mathematics, B.V. Ramana, Tata McGraw Hill Publishing Company Ltd.

References:

- A text Book of KREYSZIG’s Engineering Mathematics, Dr. A. Ramakrishna Prasad, Wiley Publications
- A Text book of Engineering Mathematics, M. Venkata Krishna, Jaico Publishing House, 2010.
- Jain, S.R.K, Advanced Engineering Mathematics, Narosa Publishing House, London 2002.

**Syllabus for B. Tech. I Year II sem
Information Technology
ENGINEERING PHYSICS– II**

Code: 101PH02

L	T	P/D	C
3	1	-	3

UNIT-I

Semiconductor Physics: Fermi Level in Intrinsic and Extrinsic Semiconductors, Intrinsic Semiconductors and Carrier Concentration, Extrinsic Semiconductors and Carrier Concentration-drift & diffusion, Equation of Continuity, Direct & Indirect Band Gap Semiconductors, Hall Effect.

UNIT-II

Physics of Semiconductor Devices: Formation of PN Junction, Open Circuit PN Junction, Energy Diagram of PN Diode, I-V Characteristics of PN Junction, PN Diode as a Half wave & Full wave Rectifiers (Forward and Reverse Bias), Diode Equation, LED, Pin & Avalanche Photo Diodes, Photo voltaic cells

UNIT-III

Dielectric Properties: Electric Dipole, Dipole Moment, Dielectric Constant, Electric Susceptibility, Polarizability, Electronic, Ionic and Orientation Polarizations and Calculation of Polarizabilities -Internal Fields in Solids, Clausius -Mossotti Equation, Piezo-electricity, Pyro-electricity and Ferro- electricity.

UNIT - IV

Magnetic Properties: Electron spin, Relation between electron spin and magnetic moment, Origin of Magnetic Moment, Bohr Magneton, Classification of Dia, Para and Ferro Magnetic Materials on the basis of Magnetic Moment, Domain Theory of Ferro Magnetism on the basis of Hysteresis Curve, Soft and Hard Magnetic Materials, Properties of Anti-Ferro and Ferri Magnetic Materials, super conductivity – Meisner’s effect, Type I & Type II superconductors, Magnetic levitation, Applications of super conductors.

UNIT - V

Lasers: Characteristics of Lasers, Spontaneous and Stimulated Emission of Radiation, Meta-stable State, Population Inversion, Lasing Action, Einstein’s Coefficients and Relation between them, Ruby Laser, Helium-Neon Laser, Carbon Dioxide Laser, Semiconductor Diode Laser, Applications of Lasers.

Fiber Optics: Principle of Optical Fiber, Acceptance Angle and Acceptance Cone, Numerical Aperture, Types of Optical Fibers and Refractive Index Profiles – step & Graded index optical fiber, Attenuation in Optical Fibers, Application of Optical Fiber in communication system.

UNIT - VI

Nanotechnology: Origin of Nanotechnology, Nano Scale, Surface to Volume Ratio, Quantum Confinement, Bottom-up Fabrication: Sol-gel, Precipitation, Combustion Methods; Top-down Fabrication: Chemical Vapour Deposition, Physical Vapour Deposition, Pulsed Laser Vapour Deposition Methods, Characterization (XRD&TEM), carbon nanotubes, Magnetic tunnel junction, Giant magneto resistance (GMR) devices.

Text Books

1. Electrical Engineering Materials by A. J Decker
2. Applied Physics by M Chandrashekar and P Appla Naidu

References:

1. Introduction to Solid State Physics, by Charles Kittel
2. Solid State Physics [Neil by W. Ashcroft](#) , [N. David Mermin](#)
3. Physics for semiconductor devices by Michael Shur
4. Engineering Physics P K Palanisamy
5. Nanotechnology: A Gentle Introduction To The Next Big Idea by M Ratner, D Ratner
6. Nano Materials by A K Bandyopadhyay

**Syllabus for B. Tech. I Year II sem
Information Technology**

Code: 101CS01

DATA STRUCTURES AND C++

L	T	P/D	C
3	1	-	3

UNIT – I

Introduction to data structures: Abstract data type(ADT), Stacks and Queues circular queues and their implementation with arrays.Stack applications: infix to post fix conversion, postfix expression evaluation. Applications of queues.

UNIT – II

Singly linked lists, doubly linked lists, circular list and their operations, representing stacks and queues with linked lists.

UNIT – III

Trees- Binary trees, terminology, representation, traversals, Minimal Spanning trees.

Graphs- terminology, representation, graph traversals (dfs & bfs).

UNIT - IV

Searching - Linear and binary search methods.

Sorting - Bubble sort, selection sort, Insertion sort, Quick sort, merge sort.

UNIT – V

Introduction to c++ programming-object oriented programming concepts, Structured Vs OOP.Classes and objects-class definition, Objects, class scope and accessing members, access functions and utility functions.

UNIT – VI

Constructors-default constructor, parameterized constructor, constructor initialization list, copy constructor. Destructors, Static class members this pointer, friend functions and classes, Dynamic memory management with operators new and delete.

Overloading-function overloading, Operator overloading, restrictions on operator overloading, overloading unary and binary operators, type conversion, templates, inheritance.

TEXT BOOKS :

- 1.Data Structure Through C by Yashavant Kanetkar.
- 2.The complete reference C++ By Herb Schildt.
3. Data Structures, A pseudocode Approach with C by Richard F. Gilberg & Behrouz A. Forouzan.

REFERENCES :

1. Alfred V. Aho, Jeffrey D. Ullman, John E. Hopcroft. *Data Structures and Algorithms*. Addison Wesley, 1983.
2. Data Structures using c Aaron M.Tenenbaum , Yedidyah Langsam,Moshe J Augenstein.
3. Introduction To Data Structures In C By Kamtane

**Syllabus for B. Tech. II Year I semester
Information Technology**

Code: 101ME02

ENGINEERING DRAWING - II

L	T	P/D	C
1	-	2	2

UNIT – I**INTERSECTION OF SIMILAR SOLIDS:**

Line method, Cutting plane method, Intersection of prism Vs prism, Cylinders Vs Cylinder, Cone Vs Cone

UNIT – II**INTERSECTION OF DIS-SIMILAR SOLIDS:**

Cylinder Vs prism, Cylinder Vs cone, Cone Vs Prism

UNIT – III

ISOMETRIC PORJECTIONS : Principles of Isometric Projection – Isometric Scale – Isometric Views – Conventions – Isometric Views of Lines, Plane Figures, Simple and Compound Solids – Isometric Projection of objects having non- isometric lines.

UNIT –IV

TRANSFORMATION OF PROJECTIONS: Conversion of Orthographic Views to Isometric Views and Vice-Versa.

UNIT –V**PERSPECTIVE PROJECTION:**

Principle, Perspective elements, Perspective View of Points, Lines, Plane Figures and Simple Solids, Vanishing Point Method, Visual ray method.

UNIT –VI

Introduction to computer aided Drafting: Generation of points, lines, curves, polygons, simple solids, dimensioning.

TEXT BOOKS:

1. Engineering Drawing, N.D. Bhat / Charotar
2. Engineering Drawing, Narayana and Kannaiah / Scietech publishers.

REFERENCES:

1. Engineering graphics with Auto CAD- R.B Choudary / Anuradha Publishes
2. Engineering Drawing, K.Venugopal/G.Sreekanjana, New Age International Publishers.

**Syllabus for B. Tech. II Year I semester
Information Technology
BASIC ELECTRICAL ENGINEERING**

Code: 101EE41

L	T	P/D	C
3	1	-	3

UNIT – I**INTRODUCTION TO ELECTRICAL ENGINEERING :**

Ohm's Law, basic circuit components, Kirchhoff's Laws. Types of sources, source transformation, Voltage – current relationship for passive elements. Series parallel circuits, star delta and delta star transformation. Network theorems, superposition, Thevenin's Maximum power transfer theorems and simple problems. Faradays laws of electromagnetic induction, concept of self and mutual inductance.

UNIT – II**ALTERNATING CIRCUITS:**

Principle of ac voltage, waveforms and basic definitions, r.m.s. and average values of alternating currents and voltage, form factor and peak factor, phasor representation of alternating quantities.

UNIT – III**DC MACHINES:**

Principle of operation of dc machines, types of D.C. generators, e.m.f equation of D.C. Generator. Types of D.C. motors, losses, torque equation, efficiency calculation in D.C. machines.

UNIT – IV**(Simple Problems):**

Transformers : Principles of constructing and operation Ideal Transformer and Practical Transformer, Losses, Transformer Test, Efficiency and Regulation.

UNIT – V**A.C. MACHINES:**

Three phase circuits – phase sequence, star and delta connection, relation between line and phase voltages and currents in balanced system.

Three phase induction motor, principle of operation, slip and rotor frequency, torque . (Elementary treatment) single phase induction motors application slipped motor.

UNIT – VI

BASIC INSTRUMENTS: Introduction, classification of instruments, operating principles, essential features of measuring instruments, Moving coil permanent magnet (PMMC) instruments, Moving Iron of Ammeters. And voltmeters (elementary Treatment only).

TEXT BOOKS:

Basic Electrical Engineering – By T.K.Nagesarkar and M.S.Sukhja Oxford University Press.

Basic electrical Engineering – By M.S.Naidu and S.Kamakshiah – TMH

REFERENCES:

Theory and problems of Basic electrical Engineering by D.P.Kotahari & L.J.Nagrath PHI.

Principles of Electrical Engineering by V.K.Mehta, S.Chand Publications.

**Syllabus for B. Tech. II Year I semester
Information Technology
BASIC MECHANICAL ENGINEERING**

Code: 101ME04

L	T	P/D	C
4	-	-	4

UNIT – I

Thermodynamics: Basic concepts of Thermodynamics, Property of gases, Zeroth Law, First Law of Thermodynamics and its applications, Second Law of Thermodynamics, Carnot cycle, Air standard cycles - Otto, Diesel, Cycles and simple problems.

Internal combustion engines and gas turbines: Internal combustion engines, definitions, classification, components, working of two- stroke, four stroke cycle engines, SI and CI Engines, performance parameters, simple problems, cooling, and lubrication of IC engines.

UNIT – II

Steam generators: Classification of boilers, differences between fire tube and water tube boilers, Cochran and Lancashire boilers, Locomotive boiler, Babcock – Wilcox boiler and High pressure boilers - Benson and La-Mount boilers only.

Steam and Gas Turbines: Layout of steam power plant, types of steam turbines, differences between impulse and reaction turbines, description of impulse and reaction turbines, methods of reducing turbine speed (compounding), Schematic of gas turbine power plants - closed and open cycle types, methods to improve performance of open cycle plant.

UNIT – III

Refrigeration and Air Conditioning: Definition, Refrigeration and Air conditioning, Schematic and description of vapour compression refrigeration and vapour absorption systems, Domestic Refrigerator, Summer and winter air conditioning systems.

UNIT – IV

Hydraulic pumps and Turbines: Reciprocating and centrifugal pumps and their applications.

Layout of Hydro-electric power plant, Classification of water turbines, Description and principle of operation of Pelton wheel and Francis turbine (without velocity triangles), Axial flow reaction turbine.

UNIT - V

Metal casting: Casting methods and their characteristics, advantages, limitations and applications.

Welding: Types of welding - arc welding, gas welding & gas cutting, resistance welding, soldering and brazing.

UNIT - VI**Mechanical working of metals:**

Hot working and cold working processes, Press working, differences, basic processes and their characteristics, advantages, limitations and applications.

Machine Tools:

Principles of working of different types of machine tools - lathe, shaper, drilling, milling, grinding, and NC Machines - Operations performed and Applications.

TEXT BOOKS :

1. Mathur, M.L., Mehta, F.S. and Tiwari, R.P., Elements of Mechanical Engineering, Jain Brothers, New Delhi, 2005.
2. R.K. Rajput, "Elements of Mechanical Engineering", Laxmi Publications, 1994.

REFERENCES :

1. P.N.Gupta, M.P. Poonia, "Elements of Mechanical Engineering", Standard Publishers Distributors Nai Sarak, Delhi.
2. R.C.Gupta, "Mechanical Engineering", Khanna Publishers, Delhi.

**Syllabus for B. Tech. I Year II semester
Information Technology
ENGLISH LANGUAGE LAB-II**

Code: 101EN72

L	T	P/D	C
-	-	2	1

Introduction:

The introduction of the English Language lab is considered essential at third year level. At this stage the students need to prepare themselves for their careers which may require them to listen to, read, speak and write in English both for their professional and interpersonal communication in the globalize context.

The proposed course should be an integrated theory and lab course to enable students to use good English and perform the following:

- Gather ideas and information, to organize ideas relevantly and coherently
- Engage in debates
- Participate in group discussions
- Face interviews
- Write project/research reports/technical reports
- Make oral presentations
- Write formal letters
- Transfer information from non-verbal to verbal texts and vice versa
- To communicate effectively in informal and formal situations

Objectives:

The lab focuses on using computer-aided multimedia instruction for language development to meet the following targets:

1. To improve the students' fluency in English, through a well-developed vocabulary and enable them to listen to English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and professional contexts.
2. Further they would be required to communicate their ideas relevantly and coherently in writing

Syllabus:

1. Functional English –Starting a conversation-responding appropriately and relevantly-using the right body language-role plays based on different situations
2. Vocabulary building – Synonyms and antonyms, word roots, one-word substitutes, prefixes and suffixes, etymology, analogy, idioms and phrases
3. Reading Comprehension – Reading for facts, guessing meanings from the context, scanning, skimming, inferring meaning and critical reading
4. Report Writing Strategies– Types of formats and styles, subject matter – organization, clarity, coherence, and style, planning, data collection, tools and analysis
5. Debate

Minimum Lab Requirement:

The English language lab shall have two parts:

- a. The Computer Aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English Language software for self-study by learners.
- b. The Communication Skills lab with movable chairs and audio visual aids with a PA system. A T V, Digital stereo-audio and video system and camcorder etc.

Software:

- ❖ Hi Class system Monitoring Software
- ❖ Globerena English Lab Plus software
- ❖ GRE Computer based test (booklet + CD)
- ❖ GMAT Computer based test (booklet + CD)
- ❖ GRE computer based test (booklet + CD)
- ❖ IELTS preparatory guide CD

References:

1. Communicate or Collapse: A Handbook of Effective Public Speaking
2. Group Discussions and Interviews by Pushpa Lata & Kumar, Prentice Hall of India
3. Academic Writing – A practical Guide for students by Stephen Bailey, Rontledge Falmer, London and New York, 2004

**Syllabus for B. Tech. I Year II semester
Information Technology
DATASTRUCTURES AND C++ LAB**

Code: 101CS71

L	T	P/D	C
-	-	3	2

1. Write a C program that implement stack and its operations using arrays
2. Write a C program that implement Queue and its operations using arrays.
3. Write a C program that uses Stack operations to perform the following
 - i) Converting infix expression into postfix expression
 - ii) Evaluating the postfix expression
4. Write a C program that uses functions to perform the following operations on singly linked list.:
 - i) Creation ii) Insertion iii) Deletion iv) Traversal
5. Write a C program that uses functions to perform the following operations on doubly linked list.:
 - i) Creation ii) Insertion iii) Deletion iv) Traversal in both ways
6. Write a C program that uses functions to perform the following:
 - i) Creating a Binary Tree of integers
 - ii) Traversing the above binary tree in preorder, inorder and postorder.
7. Write C programs that use both recursive and non recursive functions to perform the following searching operations for a Key value in a given list of integers :
 - i) Linear search ii) Binary search
8. Write C programs that implement the following sorting methods to sort a given list of integers in ascending order:
 - i) Bubble sort ii) Quick sort
9. Write C programs that implement the following sorting methods to sort a given list of integers in ascending order:
 - i) Insertion sort ii) Merge sort iii) Selection Sort
10. Write a C++ program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a,b,c and use the quadratic formula. If the descremainant b^2-4ac is negative, display a message stating that there are no real solutions.
11. A Fibonacci Sequence is defined as follows: the first and second terms in the sequence are 0 and Subsequent terms are found by adding the preceding two terms in the sequence. Write a C++ program to generate the first n terms of the sequence.
12. Write a C++ program that checks whether a given string is palindrome or not.

TEXT BOOKS :

- 1.Data Structure Through C by Yashavant Kanetkar.
- 2.The complete reference C++ By Herb Schildt.

**Syllabus for B. Tech. I Year II semester
Information Technology**

Code: 101PH72

ENGINEERING PHYSICS LAB-II

	L	T	P/D	C
	-	-	3/2	1
1. Hall effect				
2. Dielectric constant of a given material				
3. Characteristics of Laser diode.				
4. Numerical aperture of optical fiber.				
5. Bending loss of optical fiber.				
6. Stewart & Gee's Experiment (Determination of magnetic induction flux density along the axis of a circular coil).				
7. Newton's rings				
8. Determination of rigidity modulus of a given metal wire - Torsional Pendulum				
9. Determination of the acceleration due to gravity by compound pendulum.				
10. Ultrasonic velocity				

**Syllabus for B. Tech. I Year II semester
Information Technology
IT WORKSHOP -II**

Code: 101IT73

L	T	P/D	C
-	-	3/2	1

Week 1 : Introduction to S/W's difference b/w hardware and software. Introduction to MS-Office & Latex and its importance.

Using latex & word – Accessing, overview of toolbars saving files, rulers, format painter.

Features : Formating fonts, Drop cap, Applying text effects, character spacing, Borders, colors, inserting Header & Footer & Date & Time options.

Week 2 : Creating Project

Formating styles, Inserting Table, Bullets & Numbering, Changing Text Direction, Cell Alignment, Footnote, Hyperlink, Symbols, Spell check, Track changes.

Creating News letters :Table of content, Newspaper columns, Images from files & Clip Art, Drawing toolbar & Word Art, Formatting Images, Textboxes, Paragraphs & Mail merge.

Week 3 :

Basics of PP

Features : PPT Orientation, Slide layouts, Inserting Text, Word Art, Formatting Text, Bullets & Numbering, Autoshapecs, Lines & Arrows, Hyperlinks, Inserting Images, ClipArt, Audio, Video, Objects, Tables & Charts, Master layouts (Slide template & Notes) types of views (basic, Presentation, slide slotter, notes), Inserting – Background, text Design Templates, Hidden slides.

Week 4 : Excel

Introduction to Excel

Features :Accessing, Overview at toolbars, Saving excel files, Gridlines, Format cells, Summation, Auto fill, formating text.

Week 5 :

Formula in excel – Avg, std Dev, Charts, Roaming & Inserting worksheets, Hypoer linking, count function, loopup / Vlookup, sorting, Conditional formatting.

Week 6:

Introduction to MS-Acess,

Features :Create a db, Create a table, Adding data, create Form, modify a Form, Create a query, Modify a query, create a macro.

Week 7:

Conversation Access Database to excel, Introduction of MS-Outlook – Introduction to outlook, Different views in outlook.

Features :

Reviewing msg's in the Inbox, replying to msg, forarding a msg, envelopes moving from msg to msg in the Inbox, prompting a msg, Address books, contacts, Adding Names to contacts, Personal Distribution lists, Folders Making a msg's to folders, Recovering & deleting a msg calendar.

Syllabus for B. Tech. II Year I semester
Information Technology
Code: 101MA07 NUMERICAL METHODS & PARTIAL DIFFERENTIAL
EQUATIONS
(Common to CSE & IT)

L	T	P/D	C
3	1	-	3

Unit-I

Solution Of Algebraic And Transcendental Equations: Introduction – The Bisection Method – The Method of False Position – The Iteration Method – Newton-Raphson Method.

Interpolation: Introduction— Finite differences- Forward Differences- Backward differences –Central differences – Symbolic relations and separation of symbols, Newton’s formulae for interpolation – Gauss Central Difference Formulae (without proofs)

Unit-II

Interpolation with unevenly spaced points – Lagrange’s Interpolation formula – Newton’s divided difference method. Numerical Differentiation.

Curve Fitting Fitting a straight line – Second degree curve – exponential curve – power curve by method of least squares –Correlation and Regression.

Unit-III

Numerical Integration– Trapezoidal rule – Simpson’s 1/3 Rule – Simpson’s 3/8 Rule, Gaussian quadrature rule. Numerical solution of Ordinary Differential equations: Solution by Taylor’s series – Picard’s Method of successive Approximations – Euler’s Method – Runge-Kutta Methods (without proofs).

Unit-IV

Partial Differential Equations Partial differential equations : Formation of partial differential equations by elimination of arbitrary constants and arbitrary functions – Solutions of first order linear equation – Non-linear (Standard type) equations. Method of separation of variables.

Unit – V

Fourier Transforms : Fourier transformation, sine and cosine transformations, Finite Fourier transforms ,Parseval’s identities

Unit –VI

Elementary Graph Theory: Graphs, Representation by matrices, Adjacent matrix, Warshall’s Algorithm, M Incident matrix, Simple, Multiple, Regular, complete, Sub graphs, Isomorphic graphs.

Text Books:

1. Higher Engineering Mathematics, B.S. Grewal , Khanna Publications, New Delhi.
2. Engineering Mathematics, B.V.Ramana, Tata McGraw Hill Publishing Company Ltd.

References:

1. A text Book of KREYSZIG’s Engineering Mathematics, Dr. A. Ramakrishna Prasad, Wiley Publications
2. A Text book of Engineering Mathematics, M.Venkata Krishna, Jaico Publishing House, 2010.
3. Jain, S.R.K, Advanced Engineering Mathematics, Narosa Publishing House, London 2002.

**Syllabus for B. Tech. II Year I semester
Information Technology
SWITCHING THEORY AND LOGIC DESIGN**

Code: 101EC06

L	T	P/D	C
3	1	-	3

UNIT I

Boolean Algebra: Axiomatic definition of Boolean algebra, Binary operators, postulates of and theorems. Switching functions, Canonical forms and Standard forms, Simplification of switching functions using theorems.

UNIT II

Minimization of Switching Functions: Karnaugh map method, Prime implicants, don't care combinations, Minimal SOP and POS forms, Quine-McCluskey Tabular Method, Prime Implicant chart, simplification rules.

UNIT III

Combinational Logic Design: Single output and multiple output combinational logic circuit design, AND-OR, OR-AND, and NAND/NOR realizations, Exclusive-OR and Equivalence functions, Binary adders/subtractors, Encoder, Decoder, Multiplexer, Demultiplexer, MUX realization of switching functions, Parity bit generator, Code-converters, Contact Networks, Hazards and hazard free realizations.

UNIT - IV

Programmable Logic Devices, Threshold Logic: Basic PLD's-ROM, PROM, PLA, and PLD Realization of Switching functions using PLDs.

UNIT - V

Symmetric Networks: Properties of Symmetric Functions, Symmetric relay contact networks, Identification and realization of symmetric functions.
Threshold Logic: Capabilities and limitations of Threshold gate. Synthesis of threshold functions. Multigate Synthesis.

UNIT - VI

Sequential Circuits: Classification of sequential circuits (Synchronous, Asynchronous Pulse mode, and Level mode with examples). Basic flip-flops-Triggering and excitation tables. The sequential circuit model. Design of simple synchronous sequential circuits such as counters. Design of modulo-N Ring & Shift counters, Serial binary adder, and sequence detector.
Introduction to Asynchronous Machines.

Textbooks:

1. Switching & Finite Automata theory – Zvi Kohavi, TMH, 2nd Edition.
2. Switching Theory and Logic Design – CVS Rao, Pearson Education, 2005.

References:

1. An Engineering Approach to Digital Design – Fletcher, PHI. Digital Logic – Application and Design – John M. Yarbrough, Thomson.
2. Fundamentals of Logic Design – Charles H. Roth, Thomson Publications, 5th Edition, 2004.
3. Digital Logic Applications and Design – John M. Yarbrough, Thomson Publications, 2006

**Syllabus for B. Tech. II Year I semester
Information Technology
BASIC ELECTRONICS FOR IT**

Code: 101EC02

L	T	P/D	C
3	1	-	3

UNIT-I

SEMICONDUCTOR DIODES AND APPLICATIONS: p-n junction diode, Characteristics and Parameters, Diode approximations, DC load line, Temperature dependence of p-n characteristics, AC equivalent circuits, Zener diodes. Half-wave diode rectifier, Ripple factor, Full-wave diode rectifier, Other full-wave circuits, Shunt capacitor Power supply performance, Zener diode voltage regulators. (Qualitative treatment only) - 08 periods

UNIT-II

TRANSISTORS: Bipolar Junction transistor, Transistor Voltages and currents, amplification, Common Base, Common Emitter and Common Collector Characteristics, DC Load line and Bias Point.

BIASING METHODS: Base Bias, Collector to Base Bias, Voltage divider Bias, Comparison of basic bias circuits, Bias circuit design, Thermal Stability of Bias Circuits (Qualitative discussions only). - 08 periods

UNIT-III

OTHER DEVICES: Silicon Controlled Rectifier (S.C.R), SCR Control Circuits, More S.C.R applications; n-junction transistor, UJT applications, Junction Field effect Transistors (Exclude Fabrication and Packaging), JFET Characteristics, FET Amplification. - 08 periods

UNIT-IV

AMPLIFIERS & OSCILLATORS: Decibels and Half power points, Single Stage CE Amplifier and Capacitor coupled two stage CE amplifier (Qualitative discussions only), Series voltage negative feedback and additional effects of Negative feedback (Qualitative discussions only), The Barkhausen Criterion for Oscillations, BJT RC phase shift oscillator, Hartley, Colpitts and crystal oscillator (Qualitative discussions only). -08 periods

UNIT-V

SWITCHING AND IC VOLTAGE REGULATORS: IC 723 voltage regulators and three terminal IC regulators, DC to AC converter, switching regulators, voltage multipliers, UPS, SMPS.

UNIT-VI

NUMBER SYSTEMS: Introduction, decimal system, Binary, Octal and Hexadecimal number systems, addition and subtraction, fractional number, Binary Coded Decimal numbers. -06periods

DIGITAL LOGIC: Boolean algebra, Logic gates, Half-adder, Full-adder, Parallel Binary adder. - (06 periods)

TEXTBOOKS:

1. Electronic Devices and Circuits: David. A. Bell; PHI, New Delhi, 2004
2. Electrical and Electronics & Computer Engineering for Scientists and Engineers Second Edition -K.A. Krishnamurthy & M.R.

**Syllabus for B. Tech. II Year I semester
Information Technology
OOP THROUGH JAVA**

Code: 101CS03

L	T	P/D	C
4	1	-	4

UNIT-I

History of Java, Java buzzwords, datatypes, variables, simple java program, scope and life time of variables, operators, expressions, control statements, type conversion and casting, arrays, classes and objects – concepts of classes, objects, constructors, methods, access control, this keyword, garbage collection, overloading methods and constructors, recursion, string handling.

UNIT-II

Inheritance – Definition, single inheritance, benefits of inheritance, Member access rules, super classes, polymorphism- method overriding, using final with inheritance, abstract classes, Base class object.

UNIT-III

Interfaces: definition, variables and methods in interfaces, differences between classes and interfaces, usage implements and extends keyword, an application using interfaces, uses of interfaces.

Packages: Definition, types of packages, Creating and importing a user defined package

UNIT-IV

Exception handling -exception definition, benefits of exception handling, exception hierarchy, usage of try, catch, throw, throws and finally, built in exceptions, creating own exception sub classes.

Multi-Threading:-Thread definition, types of multitasking, uses of multitasking, creating threads using Thread class and Runnable interface, synchronizing threads, thread life cycle.

UNIT-V

Advantages of GUI over CUI, The AWT class hierarchy, Component, Frame, Event handling: Delegation event model, closing a Frame, mouse and keyboard events, Adapter classes.

user interface components- labels, button, scrollbars, text components, check box, check box groups, choices, lists panels – scrollpane, menubar, graphics, layout manager – layout manager types – boarder, grid, flow, card and grid bag.

Applets – Concepts of Applets, differences between applets and applications, life cycle of an applet, types of applets, creating applets, passing parameters to applets.

UNIT-VI

Networking – Basics of network programming, addresses, ports, sockets, simple client server program, multiple clients, sending file from server to client, parallel search server.

TEXT BOOKS :

Java; the complete reference, 6th edition, Herbert schildt, TMH.

Introduction to Java programming 6th edition, Y. Daniel Liang, pearson education.

REFERENCES :

1. Core Java 2, Vol 1, Fundamentals, Cay.S.Horstmann and Gary Cornell, seventh Edition, Pearson Education.
2. Core Java 2, Vol 2, Advanced Features, Cay.S.Horstmann and Gary Cornell, **Seventh Edition, Pearson Education**

Syllabus for B. Tech. II Year I semester
Information Technology
MATHEMATICAL FOUNDATION OF COMPUTER SCIENCE

Code: 101IT02

L	T	P/D	C
3	1	-	3

UNIT – I**Mathematical and Predicate Logic**

Statements and Notations, Connectives, Well Formed Formulae, Truth Tables, Tautology, Predicate Logic, Free & Bound Variables, Rules of Inference, Consistency, Proof of Contradiction.

UNIT – II**Relations and Functions**

Properties of Binary Relations, Equivalence Relations, POSETs, Hasse Diagrams, Functions, Inverse Functions, Recursive Functions.

UNIT – III**Algebraic Structures**

Algebraic Systems Examples and General Properties, Semi-groups and Monoids, Groups, Subgroups.

UNIT IV**Elementary Combinatorics**

Permutations, Combinations, Combinations with Repetitions, Principle of Inclusion-Exclusion.

UNIT – V**Recurrence Relations**

Generating Functions, Recurrence Relations, Method of Generating Functions.

UNIT – VI**Graph Theory**

Representation of Graphs, Euler and Hamiltonian Graphs, Planar Graphs, Graph Colouring.

Text Books:

1. Joe L. Mott, Abraham Kandel, Theodore P. Baker, *Discrete Mathematics for Computer Scientists & Mathematicians*, Second Edition, PHI, 2005.
2. Bernard Kolman, Robert C. Busby, Sharon Cutler Ross, *Discrete Mathematical Structures*, Fourth Edition, PHI, 2002.

References:

- I. Tremblay J. P. & Manohar R., *Discrete Mathematical Structures with applications to Computer Science*, TMH, 2006.
- II. Dr. D. S. Chandrasekharaiah, *Mathematical Foundations of Computer Science (Discrete Structures)*, Prism, 2006.
- III. Ralph P. Grimaldi and B. V. Ramana, *Discrete and Combinatorial Mathematics – An Applied Introduction*, Fifth Edition, Pearson, 2006.

**Syllabus for B. Tech. II Year I sem
Information Technology
COMPUTER ORGANISATION**

Code: 101EM03

L	T	P/D	C
3	1	-	3

UNIT - I

BASIC STRUCTURE OF COMPUTERS: Computer Types, Functional unit, Basic OPERATIONAL concepts, Bus structures, Software, Performance, multiprocessors and multi computers. Data Representation. Fixed Point Representation. Floating – Point Representation. Error Detection codes.

UNIT - II

REGISTER TRANSFER LANGUAGE AND MICROOPERATIONS: Register Transfer language. Register Transfer Bus and memory transfers, Arithmetic Micro operations, logic micro operations, shift micro operations, Arithmetic logic shift unit. Instruction codes. Computer Registers Computer instructions – Instruction cycle. memory – Reference Instructions. Input – Output and Interrupt. STACK organization. Instruction formats. Addressing modes. DATA Transfer and manipulation. Program control. Reduced Instruction set computer.

UNIT - III

CONTROL UNIT DESIGN : Control memory, Address sequencing, microprogram example, design of control unit Hard wired control, Microprogrammed control.

UNIT - IV

COMPUTER ARITHMETIC & LOGIC OPERATIONS : Addition and subtraction, multiplication Algorithms, Division Algorithms, Floating – point Arithmetic operations. Decimal Arithmetic unit Decimal Arithmetic operations, AND, OR, NOT & XOR operations.

UNIT - V

THE MEMORY SYSTEM : Basic concepts semiconductor RAM memories. Read-only memories Cache memories performance considerations, Virtual memories secondary storage. Memory management and MMU.

UNIT - VI

INPUT-OUTPUT ORGANIZATION : Peripheral Device, Input-Output Interface, Asynchronous data transfer Modes of Transfer, Priority Interrupt Direct memory Access, Input-Output processor (IOP) Serial communication; Introduction to peripheral component, Interconnect (PCI) bus. Introduction to standard serial communication protocols like RS232, USB, IEEE1394.

TEXT BOOKS :

1. Computer Organization – Carl Hamacher, Zvonks Vranesic, SafeaZaky, Vth Edition, McGraw Hill.
2. Computer Systems Architecture – M.Moris Mano, IIIrd Edition, Pearson/PHI.

REFERENCES :

1. Computer Organization and Architecture – William Stallings Sixth Edition, Pearson/PHI.
2. Computer Architecture: Fundamentals and principles of Computer Design, Joseph D. Dumas II, BS Publication.

Syllabus for B. Tech. II Year I sem
Information Technology
Code: 101EN73
FUNCTIONAL AND COMMUNICATIVE WRITTEN ENGLISH

L	T	P/D	C
-	-	2	2

Course Description

This course provides a platform to the learners to practice written communication to excel and sustain in the industry. It emphasizes on the techniques of collecting, organizing, and presenting the information in formal settings. The focus is also on the use of appropriate vocabulary using different formats and templates to communicate in different professional situations.

Learning Objectives**By the end of this course, students will be equipped with:**

1. Good written communication skills
2. Will perform all written tasks with clarity and coherence
3. Effective written employment communication
4. Report Writing and documentation skills
5. Become adept using electronic communication

UNIT I

An introduction to Technical writing

- The writing process: an overview
- The process in practice
- Objectives in Technical Writing

UNIT II

Correspondence

- Memos
- Letters
- Résumé

UNIT III

Visual Appeal

- Document Design
- Graphics
- Three dimensional graphics
- Criteria for effective graphics
- Types of graphics

UNIT IV

Electronic Communication

- The Internet- The “Information Superhighway”
- The Internet – A Company’s Internal Web
- The Extranet – A Web within a Web

UNIT V

Technical Applications

- Technical Description
- Instructions and User’s Manuals

UNIT VI

Report Strategies

- The Summary
- Reports
- Proposals

Textbook:

1. **Technical Writing: Process and Product by Sharon J Gerson; Fifth edition. Pearson Publishers.**

References:

1. Strategies for Engineering Communication: Stevenson Susan and Steve Whitmore: Wiley, India.
2. Technical Report Writing Today
3. How to build a better vocabulary –Nurnberg Maxwell & Morris Rosenblum: Grand Central Publishing
4. Six weeks to words of power –Funk Wilfred: W.R.Goyal Publishers & Distributors
5. Word power made easy – Norman Lewis
6. Norman Lewis, How to read better and faster: W.R.Goyal Publishers, New Delhi

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**Syllabus for B. Tech. II Year I sem
Information Technology
BASIC ELECTRICAL LAB**

Code: 101EE91

L	T	P/D	C
-	-	3/2	1

1. Swinburne's test on D.C. shunt machine. (Predetermination of efficiency of a given D.C. Shunt machine working as motor and generator.)
2. OC and SC tests on single phase transformer (Predetermination of efficiency and regulation at given power factors)
3. Brake test on 3-phase Induction motor (Determination of performance characteristic)
4. Regulation of alternator by Synchronous impedance method. In addition to the above four experiments, any one of the experiments from the following list is required to be conducted:
5. Speed control of D.C. Shunt motor by
 - a) Armature Voltage control
 - b) Field flux control method
6. Brake test on D.C. Shunt Motor

Syllabus for B. Tech. II Year I sem
Information Technology
BASIC ELECTRONICS LAB

Code: 101EC84

L	T	P/D	C
-	-	3/2	1

1. Transistor CE Characteristics (Input and Output)
2. Full wave Rectifier with and without filters.
3. CE Amplifiers.
4. RC Phase Shift Oscillator
5. Class A Power Amplifier
6. Micro Processor

**Syllabus for B. Tech. II Year I sem
Information Technology
OOP THROUGH JAVA LAB**

Code: 101CS74

L	T	P/D	C
-	-	3	2

1 A) Write a program to print prime numbers up to a given number.

B) Write a program to print roots of a quadratic equation $ax^2+bx+c=0$.

C) Write a program to print Fibonacci sequence up to a given number.

D) Write a program to print the following format.

```

*
 * *
* * *
* * * *
```

2.A) Define a class to represent a bank account and include the following members

Instance variables:

- (i) Name of depositor
- (ii) Account No
- (iii) Type of account
- (iv) Balance amount in the account

Instance Methods:

- (i) To assign instance variables (Constructors - Zero argument and parameterized)
- (ii) To deposit an amount
- (iii) To withdraw amount after checking the balance
- (iv) To display name and address

Define ExecuteAccount class in which define main method to test above class.

B) In the above account class, maintain the total no. of account holders present in the bank and also define a method to display it. Change the main method appropriately.

C) In main method of ExecuteAccount class, define an array to handle five accounts.

D) In Account class constructor, demonstrate the use of "this" keyword.

E) Modify the constructor to read data from keyboard.

F) Overload the method deposit() method (one with argument and another without argument)

G) In Account class, define set and get methods for each instance variable.

Example:

For account no variable, define the methods
getAccountNo() and setAccountNo(int accno)

In each and every method of Account class, reading data from and writing data to instance variables should be done through these variables.

3.A) Define Resister class in which define the following members:

Instance variables:

resistance

Instance Methods:

giveData(): To assign data to the resistance variable

displayData(): To display data in the resistance variable
constructors

Define subclasses for the Resistor class called SeriesCircuit and ParallelCircuit in which define methods : calculateSeriesResistance() and calculateParallelResistance() respectively. Both the methods should take two Resistor objects as arguments and return Resistor object as result. In main method, define another class called ResistorExecute to test the above class.

B) Modify the above two methods which should accept array of Resistor objects as argument and return Resistor object as result.

C) Write a program to demonstrate method overriding.

D) Write a program to demonstrate the uses of “super” keyword (three uses)

E) Write a program to demonstrate dynamic method dispatch (i.e. Dynamic polymorphism).

4) A) Write a program to check whether the given string is palindrome or not.

B) Write a program for sorting a given list of names in ascending order.

C) Write a program to count the no. of words in a given text.

5) A) Define an interface “GeometricShape” with methods area() and perimeter() (Both method’s return type and parameter list should be void and empty respectively).

Define classes like Triangle, Rectangle and Circle implementing the “GeometricShape”

interface and also define “ExecuteMain” class in which include main method to test the above class

B) Define a package with name “sortapp” in which declare an interface “SortInterface” with method sort() whose return type and parameter list should be void and empty. Define “subsortapp” as subpackage of “sortapp” package in which define class “SortImpl” implementing “SortInterface” in which sort() method should print a message linear sort is used.

Define a package “searchingapp” in which declare an interface “SearchInterface” with search() method whose return type and parameter list should be void and empty respectively.

Define “searchingimpl” package in which define a “SearchImpl” class implementing “SearchInterface” defined in “searchingapp” package in which define a search() method which should print a message linear search is used.

Define a class ExecutePackage with main method using the above packages (classes and its methods).

6) Modify the withdraw() method of Account class such that this method should throw “InsufficientFundException” if the account holder tries to withdraw an amount that leads to condition where current balance becomes less than minimum balance otherwise allow the account holder to withdraw and update the balance accordingly.

7) A) Define two threads such that one thread should print even numbers and another thread should print even numbers.

B) Modify the Account class to implement thread synchronization concept.

C) Define two threads such that one thread should read a line of text from text file and another thread should write that line of text to another file. (Thread communication example).

D) Write a program to implement thread priority.

8) A) Design the user screen as follows and handle the events appropriately.

Add Window

Fist Number

Second Number

Result

9)Write a program to simulate a calculator

10)Write a program to create feedback form

Feedback Form

Date: 2/1/2020

Faculty Name: Vengal Rao

Subject: DSP

Year/Semester: III/IV 1st Sem

Optional

Student Name: FORMTEXT

Roll Number: FORMTEXT

Branch: FORMDROPDOWN

Review Guidelines					
Complete this peer review, using the following scale: NA = Not Applicable 1 = Unsatisfactory 2 = Marginal 3 = Meets Requirements 4 = Exceeds Requirements 5 = Exceptional					
Evaluation					
	(5) = Exceptional	(4) = Exceeds Requirements	(3) = Meets Requirements	(2) = Marginal	(1) = Unsatisfactory
Required Skills And Knowledge in the Class	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX
Response To Questions	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX
Ability To Learn And Teach New Skills	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX
English Speaking Skills	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX
Making Students To Involve In The Class	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX
The Way Syllabus is Covered	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX	FORMCHECKB OX

- 11) Develop a simple client server program (one way communication)
- 12) Develop a client that sends data to the server and also develop a server that sends data to the client (two way communication)
- 13) Develop a client/server application in which client reads a file name from keyboard and sends the file name to the server, and server will read the file name from client and send the file contents to the client.

Syllabus for B. Tech. II Year II semester
Information Technology
ENVIRONMENTAL STUDIES

Code: 101CH03

L	T	P/D	C
3	1	-	3

UNIT I

ECOLOGY AND ECOSYSTEMS: Component of nature, Definition, S Scope and importance, Eco system Definition and concept, Structure and function, Food chain and food web, Ecological pyramids, Biogeo chemical cycles, Ecological niche and succession, Classification (forest, grass land, desert, pond, river, marine, estuarine, wet lands). Environmental organizations (UNEP, WWF, IPCC, MOEN, TERI), Environmental activists- Sunderlal Bahuguna, Baba Amte, Anna Hazare, Medha Patkar, Arundathi Roy, AL Gore.

UNIT II

METAL IONS IN BIOLOGICAL SYSTEM: Nitrogen Fixation, Oxygen transport (Hemo globin, Mayoglobin), Electron transfer reaction, Porphyrines(Chlorophyll), Metallo enzymes, photo system (PSI, PS II).

UNIT III

ENVIRONMENTAL CHEMISTRY: Atmosphere definition, layers, state(weather and climate) acid rain, Green house effect, PAN, Smog, Preliminary concepts of climate change, Ozone layer depletion, Seasons in India, Monsoons, El Nino, ENSO, Global warming, Kyoto protocol, Montreal Protocol, Carbon Trading, Hydrosphere-definition, Types (surface and ground water), Distribution, Water conservation, Use and over exploitation, Floods, Drought, dams-benefits and problems, Conflicts over water, Litho sphere- chemical composition of earth (core, mantle, crust), Minerals resources- Environmental Effects of mining, Rocks and Soils, Plate tectonics.

UNIT IV

BIO DIVERSITY AND ITS CONSERVATION: Introduction, Definition, Genetic species and Eco system diversity, Value of bio diversity, Hot spots, Threats to bio diversity, Conservation strategies: Insitu and Exsitu conservation, Biological Diversity Act 2002, Wild life Protection Act.

UNIT V

ENVIRONMENTAL POLLUTION: Air pollution definition, causes, Effects and Control measures, Environment protection Act, Air (prevention and control of pollution) Act 1981, Case study: Bhopal gas tragedy, London Smog, Chernobyl disaster, Water pollution- Definition, types, Characteristics of domestic and industrial effluents-water quality parameters, BOD, COD, DO, Drinking Water treatment and Standards.

UNIT VI

POLLUTION CONTROL: Waste water treatment, Case studies: Ganga water pollution, Mercury pollution- Minamatabay disease, Water(prevention and control of pollution) Act 1974, Definition, Causes, Effect and Control measures: Soil pollution, Noise Pollution and Marine Pollution, Waste management- Solid waste Hazardous waste and E-Waste Management, Disaster Management Floods, Earth quakes and Cyclones.

TEXT BOOKS:

1. INTRODUCTION TO ENVIRONMENTAL SCIENCE –by Dr. Y. Anjaneyulu, B.S. Publications 2004.
2. ENVIRONMENTAL STUDIES by Erach bharucha 2005, University grants commission, University press.

References:

1. ENVIRONMENTAL SCIENCES-A NEW APPROACH by Purohit, shammi and Agarwal, Agrobios (India) 2004.
2. ENVIRONMENTAL SCIENCES-A Text book for Undergraduate by Dr. K. Mukkanti, S. Chand & Company Ltd., 2010.

**Syllabus for B. Tech. II Year II semester
Information Technology
PROBABILITY AND STATISTICS**

Code: 101MA10

L	T	P/D	C
3	1	-	3

UNIT – I

Probability Sample spaces and Events – Counting – Probability – The Axioms of probability – some Elementary Theorems – Conditional probability – Baye’s Theorem .

UNIT – II

Probability Distributions Random variable – Discrete and continuous – Distribution – Distribution function – Distributions, Expectation. Binomial, Poisson and normal distributions – related properties.

UNIT – III

Sampling Distributions: Populations and samples – Sampling distribution of the Mean (known) – The sampling distribution of the mean (unknown), proportions, sums and differences . Applications of central Limit Theorem

UNIT – IV

Estimation: Point estimation – Interval estimation – Bayesian estimation

Inferences Concerning Means And Proportions : Tests of Hypotheses, type –I and type-II errors, , Hypotheses concerning means and proportions for large size samples

UNIT – V

Test of significance-Student t-test, F-tests, χ^2 test, goodness of fit, independence of attributes.

UNIT – VI

Linear Programming: Introduction, Formulation of LPP ,Graphical method, Simplex method, Big-M method, Two Phase Method, Duality Principle.

Text Books:

1. Higher Engineering Mathematics, B.S. Grewal , Khanna Publications, New Delhi.
2. Engineering Mathematics, B.V.Ramana, Tata McGraw Hill Publishing Company Ltd.

References:

1. Probability and Statistics for Engineers: Miller and John E. Freund, PHI Publishers, 6th Edition.
2. Probability and Statistics –M.Venkata Krishna & G.Shankar Rao, BS Publications
3. Fundamentals of Mathematical Statistics: Gupta and Kapoor – S. Chand and Co.
4. Probability and Statistics for Engineers- Walpole and Meyer.

**Syllabus for B. Tech. II Year II semester
Information Technology**

Code: 101IT03

DATA BASE MANAGEMENT SYSTEMS

L	T	P/D	C
3	1	-	3

UNIT I :

Data base System Applications, data base System VS file System – View of Data – Data Abstraction – Instances and Schemas – data Models – the ER Model – Relational Model – Other Models – Database Languages – DDL – DML – database Access for applications Programs – data base Users and Administrator – Transaction Management – data base System Structure – Storage Manager – the Query Processor, History of Data base Systems. Data base design and ER diagrams – Beyond ER Design Entities, Attributes and Entity sets – Relationships and Relationship sets – Additional features of ER Model – Concept Design with the ER Model – Conceptual Design for Large enterprises.

UNIT II :

Introduction to the Relational Model – Integrity Constraint Over relations – Enforcing Integrity constraints – Querying relational data – Logical data base Design – Introduction to Views – Destroying /altering Tables and Views.

Relational Algebra – Selection and projection set operations – renaming – Joins – Division – Examples of Algebra overviews – Relational calculus – Tuple relational Calculus – Domain relational calculus – Expressive Power of Algebra and calculus.

UNIT III :

Form of Basic SQL Query – Examples of Basic SQL Queries – Introduction to Nested Queries – Correlated Nested Queries Set – Comparison Operators – Aggregative Operators – NULL values – Comparison using Null values – Logical connectivity's – AND, OR and NOT – Impact on SQL Constructs – Outer Joins – Disallowing NULL values – Complex Integrity Constraints in SQL Triggers and Active Data bases.

UNIT IV :

Schema refinement – Problems Caused by redundancy – Decompositions – Problem related to decomposition – reasoning about FDS – FIRST, SECOND, THIRD Normal forms – BCNF – Lossless join Decomposition – Dependency preserving Decomposition – Schema refinement in Data base Design – Multi valued Dependencies – FORTH Normal Form.

UNIT V :

Transaction Concept- Transaction State- Implementation of Atomicity and Durability – Concurrent – Executions – Serializability- Recoverability – Implementation of Isolation – Testing for serializability- Lock – Based Protocols – Timestamp Based Protocols- Validation- Based Protocols – Multiple Granularity, Recovery and Atomicity – Log – Based Recovery – Recovery with Concurrent Transactions – Buffer Management – Failure with loss of nonvolatile storage-Advance Recovery systems- Remote Backup systems.

UNIT VI :

Data on External Storage – File Organization and Indexing – Cluster Indexes, Primary and Secondary Indexes – Index data Structures – Hash Based Indexing – Tree base Indexing – Comparison of File Organizations – Indexes and Performance Tuning- Intuitions for tree Indexes – Indexed Sequential Access Methods (ISAM) – B+ Trees: A Dynamic Index Structure.

TEXT BOOKS :

1. Data base Management Systems, Raghurama Krishnan, Johannes Gehrke, TATA McGrawHill 3rd Edition
2. Data base System Concepts, Silberschatz, Korth, McGraw hill, V edition.

REFERENCES :

1. Data base Systems design, Implementation, and Management, Peter Rob & Carlos Coronel 7th Edition.
2. Fundamentals of Database Systems, Elmasri Navrate Pearson Education
3. Introduction to Database Systems, C.J.Date Pearson Education

**Syllabus for B. Tech. II Year II semester
Information Technology
DATA COMMUNICATIONS**

Code : 101EC32

L	T	P/D	C
3	1	-	3

UNIT - I

Introduction to Data Communications; Networks, the Internet, protocols and standards. Network models: layered tasks, the OSI model, Layers in the OSI model, TCP/IP protocol suite, addressing

UNIT – II

Physical layer and media: Data and signals: Analog and digital, periodic analog signals, digital signals, Transmission impairment, Data rate limits, Performance.

Digital transmission: Digital – to – digital conversion, Analog – to – digital conversion, Transmission modes.

Analog transmission: Digital – to – analog conversion, Analog – to – analog conversion.

Bandwidth utilization: Multiplexing and spreading; Multiplexing, Spread spectrum

UNIT– III

Transmission media: Guided media, and unguided media

Switching: Circuit – switched networks, Datagram networks, Virtual – circuit networks, Structure of a switch.

UNIT– IV

Data link layer: error detection and correction; Introduction, Block coding, Linear block codes, Cyclic codes, Checksum

Data link control: Framing, Flow and error control, Protocols, Noiseless channels, Noisy channels, HDLC, Point – to – point protocol

UNIT – V

Multiple access: Random access, Controlled access, Channelization, Wired LANs: Ethernet: IEEE standards, Changes in the standard, Fast Ethernet, Gigabit Ethernet.

Wireless LANs: IEEE 802.11, Bluetooth, cellular telephone and satellite networks.

UNIT – VI

Connecting LANs, backbone networks, and virtual LANs: Connecting devices, Backbone networks, Virtual LANs. Virtual Circuit Networks: Frame Relay, ATM, and ATM LANs.

Textbooks:

Data Communications and Networking, Behrouz A Forouzan, Fourth Edition 2006, Tata McGraw Hill, New Delhi, India.

Reference Book:

Data Communications, William Stallings, Seventh edition.

Syllabus for B. Tech. II Year II semester
Information Technology
HUMAN VALUES, ETHICS AND IPR

Code: 101BT37

L	T	P/D	C
2	-	-	2

UNIT I:**A: INDIAN CULTURE- HUMAN VALUES AND VALUE EDUCATION:**

Purpose of Education – Indian Perspective, Civilization and Culture, Wisdom of selflessness and sacrifice, ancient wisdom on good governance and Happy life, bunch of thoughts and contribution of ancient to modern sages/ monks on Indian culture, need for interfaith understanding, cultural unity of India, what sages, seers said about knowledge devotion, meditation and happiness in life.

Concept of Human Values, Morals, Ethics, Characteristics of Values, Principles and Types of Values, Core Values , Rules of Behaviour, Distinguishing and Defining ‘Human’ Values.Truth Love and Caring, Peace, Responsibility, Justice, Human Values Applied in Practice, Values and Psychic Health, The Hierarchy of Human Values, Values of Nature, **Values of the Person**, Moral Values, **Value Education**, Basic Guidelines, content and process of Value Education.

UNIT II

B:ENGINEERING AND PROFESSIONAL ETHICS: Engineering and professionalism. Types of ethics and morality. Ethics in various professions. Professional codes of conduct and organizational mission vision and culture. Engineering Standards. Social and Global dimension of professions vis-a-vis Technology and Growth. Trust and Reliability. Role of Transparency, Honesty, Integrity and sincerity in Professional life.

UNIT III**C: HUMAN VALUES AND ETHICS**

Understanding Relationship between Ethics, Morality, Law, Characteristics of an Ethical Person. Professional Ethics, Professional Responsibility, Codes of conducts, Practice, Dos and DON'Ts of various professions. Ethical Behavior and issues in various professions (like business, marketing, media and advertising, legal, medical, financial, Education, public services and Governance Etc- through case studies). Impact of Ethical behavior and Violations on society at large (Law, culture, religion and life style). Ethical issues arising from modern technology like communications and computers. Ethical Standards, Ethics in Engineering. General Business and Ethics, Religious Views on Business Ethics, Work Ethics, Criticisms of Work Ethic Concept, Working with Ethics.

UNIT IV**D:RELEVANCE OF ANCIENTS WISDOM AND PRACTICES FOR PROFESSIONALS IN MODERN AGE:**

Problems of Modernity and impact on modern life (self, family and society). Problems of freedom in Individual centric vs family centric social structure. Health issues related to Individual freedom, competition and professional life. Relevance of Indian wisdom on individual, family and social life. Relevance of yogic and spiritual practices in modern times for intellect-mind-body harmony. Science and religion, concentration and meditation, peace of mind, Hinduism in view of Mahatma Gandhi, Role of expanse of Technology in Third Millennium. Indian literature and cultural identity, Teacher-Student relationship. Need for balance and harmonious growth in all stages of life and Development into holistic professional.

UNIT- V**E: INTELLECTUAL PROPERTY RIGHTS (IPR)**

Invention and Creativity, Basic Types of Property, Need for Protection of IPR, IP Types – Industrial Property (Patents, Trade Marks, Trade Secrets, Industrial Designs and Integrated Circuits), Copyrights and Related Rights, Geographical Indications.

UNIT-VI

WIPO Mission and Activities, GATT & Trips, Indian Position on WTO and strategies, Indian IPR legislations- commitments to WTO-Patent Ordinance and the Bill, Draft of a National Intellectual Property Policy, Case Studies on IP.

Text Books

- 1: Charles E. Harris, Michael S .Pritchard & Michael J . Rabins “Engineering Ethics” –CENGAGE Learning
- 2: I.V. Chalapati Rao “Ancient Wisdom, Modern Insights” - Sri Yabaluri Raghavaiah Memorial Trust
- 3: Smriti Srivastava “Human Values and Professional Ethics” – S.K. Kataria & Sons.
- 4: Anitha Rao R & Bhanoji Rao “Intellectual Property Rights- A Primer”, Eastern Book Company, 2008.

References:

1. Govindarajan M, Natarajan S, Senthil Kumar V.S, “Engineering Ethics”, Prentice Hall of India, New Delhi, 2004.
2. Charles D. Fleddermann, “Engineering Ethics”, Pearson Education/Prentice Hall, New Jersey, 2004(Indian Print)
3. Deborah E. Bouchoux “ Intellectual Property Rights” CENGAGE Learning

**Syllabus for B. Tech. II Year II semester
Information Technology**

Code: 101EM09

MICRO PROCESSOR AND INTERFACING

L	T	P/D	C
4	-	-	4

UNIT-I

An over view of 8085, Architecture of 8086 Microprocessor. Special functions of General purpose registers. 8086 flag register and function of 8086 Flags.

UNIT- II

.Addressing modes of 8086. Instruction set of 8086. Assembler directives, simple programs, procedures, and macros.

UNIT-III

Assembly language programs involving logical, Branch & Call instructions, sorting, evaluation of arithmetic expressions, string manipulation.

UNIT-IV

Pin diagram of 8086-Minimum mode and maximum mode of operation. Timing diagram. Memory interfacing to 8086 (Static RAM & EPROM). Need for DMA. DMA data transfer Method. Interfacing with 8237/8257.

UNIT-V

8255 PPI – various modes of operation and interfacing to 8086. Interfacing Keyboard, Displays, Stepper Motor and actuators. D/A and A/D converter interfacing.

UNIT-VI

Interrupt structure of 8086. Vector interrupt table. Interrupt service routines. Introduction to DOS and BIOS interrupts. 8259 PIC Architecture and interfacing cascading of interrupt controller and its importance.

TEXT BOOKS :

1. Advanced microprocessor and Peripherals - A.K.Ray and K.M.Bhurchandi, TMH, 2000.
2. Micro Processors & Interfacing – Douglas V. Hall, TMH, 2nd Edition, 1999.

REFERENCES :

1. Micro Computer System 8086/8088 Family Architecture, Programming and Design - Y. Liu and G.A. Gibson, PHI, 2nd Edition.
2. Microprocessors 8086/8088 – Avatar singh and Triebel, PHI.

Syllabus for B. Tech. II Year II sem
Information Technology
Code: 101EN74
EFFECTIVE COMMUNICATION AND SOFT SKILLS

L	T	P/D	C
-	-	2	2

Course Description

This course empowers the students for career opportunities, thus enhancing professional and personal growth. Effective communication and interpersonal skills are crucial to increase employment opportunities and to compete successfully in the business environment.

Soft skills provide students with a strong conceptual and practical framework to build, develop and manage teams. They play an important role in the development of the students' overall personality, thereby enhancing their career prospects. The soft skills training provides strong practical orientation to the students and helps them in building and improving their skills in communication, the effective use of English, business correspondence, presentations, team building, leadership, time management, group discussions, interviews, and inter-personal skills. This training also helps students in career visioning and planning, effective resume writing and dealing with placement consultants and headhunters.

The training is conducted in a very informal, interesting, and interactive manner, which gives ample scope for the students to interact with each other and face a wide variety of issues, topics, and situations that they are likely to come across as entry-level managers.

Learning Objectives:

By the end of the soft skills training program, the students will be able to:

- Develop effective communication skills (spoken and written).
- Develop effective presentation skills.
- Conduct effective business correspondence and prepare business reports which produce results.
- Become self-confident individuals by mastering inter-personal skills, team management skills, and leadership skills.
- Develop all-round personalities with a mature outlook to function effectively in different circumstances.
- Develop broad career plans, evaluate the employment market, identify the organizations to get good placement, match the job requirements and skill sets.
- Take part effectively in various selection procedures adopted by the recruiters.

UNIT – I**Soft Skills****Unit –II****Body language****Unit –III****Group Discussion****UNIT – IV****Interview Skills****UNIT – V****Etiquette and Manners****UNIT – VI****Developing Positive Attitude****Text Books:**

1. Soft Skills: Know Yourself and know the World by Dr.K.Alex
- S. Chand Publishing

References:

1. Prof. Kevnair's - Fluency Dictionaries
2. Kleiser Grenville-Common Errors in English:Aph publishing corporation
3. Shaw Harry and Collins- Errors in English Language and ways to correct them.
4. Funk Wilfred-Six Weeks to Words of Power: W.R. Goyal Publishers & Distributors.
5. Body Language – Your success Mantra by Shalini Verma, S Chand, 2006

Syllabus for B. Tech. II Year II semester**Information Technology****Code: 101IT75****DATABASE MANAGEMENT SYSTEMS LAB**

L	T	P/D	C
-	-	3	2

1. Creation, altering and dropping of tables and inserting rows into a table (use constraints while creating tables) examples using SELECT command.
2. Queries (along with sub Queries) using ANY, ALL, IN, EXISTS, NOTEXISTS, UNION, INTERSET, Constraints.
Example: - Select the roll number and name of the student who secured fourth rank in theclass.
3. Queries using Aggregate functions (COUNT, SUM, AVG, MAX and MIN), GROUP BY, HAVING and Creation and dropping of Views.
4. Queries using Conversion functions (to_char, to_number and to_date), string functions (Concatenation, lpad, rpad, ltrim, rtrim, lower, upper, initcap, length, substr and instr), date functions (Sysdate, next_day, add_months, last_day, months_between, least, greatest, trunc, round, to_char, to_date)
5. i)Creation of simple PL/SQL program which includes declaration section, executable section and exception –Handling section (Ex. Student marks can be selected from the table and printed for those who secured first class and an exception can be raised if no records were found)
ii)Insert data into student table and use COMMIT, ROLLBACK and SAVEPOINT in PL/SQL block.
6. Develop a program that includes the features NESTED IF, CASE and CASE expression. The program can be extended using the NULLIF and COALESCE functions.
7. Program development using WHILE LOOPS, numeric FOR LOOPS, nested loops using ERROR Handling, BUILT –IN Exceptions, USE defined Exceptions, RAISE- APPLICATION ERROR.
8. Programs development using creation of procedures, passing parameters IN and OUT of PROCEDURES.
9. Program development using creation of stored functions, invoke functions in SQL Statement and write complex functions.
10. Program development using creation of package specification, package bodies, private objects, package variables and cursors and calling stored packages.
11. Develop programs using features parameters in a CURSOR, FOR UPDATE CURSOR, WHERE CURRENT of clause and CURSOR variables.
12. Develop Programs using BEFORE and AFTER Triggers, Row and Statement Triggers and INSTEAD OF Triggers

TEXT BOOKS :

- 1)ORACLE PL/SQL by example. Benjamin Rosenzweig, Elena Silvestrova, Pearson Education 3 Edition
- 2)ORACLE DATA BASE LOG PL/SQL Programming SCOTT URMAN, Tata Mc-Graw Hill.
- 3)SQL & PL/SQL for Oracle 10g, Black Book, Dr.P.S. Deshpande.

**Syllabus for B. Tech. II Year II sem
Information Technology**

Code: 101EM74 MICRO PROCESSORS AND INTERFACING LAB

L	T	P/D	C
-	-	3	2

Introduction to MASM/TASM Assembler

Familiarization with 8086 Kit

Experiment I, II

Write ALP and execute the program to

1. Add two 8-bit numbers
2. Add two 16-bit numbers
3. Add two 32-bit numbers
4. Subtract two 8-bit numbers
5. Subtract two 16-bit numbers
6. Subtract two 32-bit numbers
7. Multiply two 8-bit numbers
8. Multiply two 16-bit numbers
9. Perform 8-bit division
10. Perform 16-bit division
11. Find square of a number
12. Find cube of a number
13. Exchange two numbers

Experiment III

Write ALP and execute the program to

14. Add a given series of numbers
15. Find average of a given series of numbers
16. Add a constant to a series of values in memory & store the result back in memory
17. Find sum of squares of a given series of numbers
18. Find sum of cubes of a given series of numbers
19. Display squares of a given series of numbers in memory

Experiment IV

Write ALP and execute the program to

20. Display cubes of a given series of numbers in memory
21. Find factorial of a given number
22. Find largest number from a given series of numbers
23. Find smallest number from a given series of numbers

Experiment V

Write ALP and execute the program to

24. Sort a series of given numbers in ascending order
25. Sort a series of given numbers in descending order
26. Find whether the given number is even or odd number
27. Find the no. of odd & even numbers from a given series of numbers

Experiment VI

Write ALP and execute the program to

28. Find sum of all even no.s from a given series of even and odd numbers
29. Find sum of all odd no.s from a given series of even and odd numbers
30. Find GCD of two given numbers
31. Find LCM of two given numbers
32. Perform one byte BCD addition
33. Perform one byte BCD subtraction

Experiment VII

Write ALP and execute the program to

34. Produce packed BCD from two ASCII characters
35. Convert decimal number to binary
36. Convert a binary number to a decimal number
37. Add two 3 x 3 matrices

Experiment VIII

Write ALP and execute the program to

38. Display Fibonacci series
39. Move a string of data bytes from one location to another
40. Concatenate two strings
41. Reverse a given string

Experiment IX

Write ALP and execute the program to

42. Compare two strings
43. Find length of a given string
44. Find whether the given byte is in the string or not
45. Insert an element in a given string

Experiment X

Write ALP and execute the program to

46. Display a message on the screen of a microcomputer
47. Fill the screen with any character pressed from the keyboard

Experiment XI

Write ALP and execute the program to

48. Interface a stepper motor
49. Generate a triangular wave

Experiment XII

Write ALP and execute the program to

50. Generate a square wave
51. Generate a saw tooth waveform

Experiment XIII

Write ALP and execute the program to

52. Interface a keyboard
53. Interface seven segment display

COURSE STRUCTURE AND DETAILED SYLLABUS

for

B.Tech – III and IV Year –

in

INFORMATION TECHNOLOGY

(Applicable from the Academic Year 2010-2011)



SREENIDHI INSTITUTE OF SCIENCE & TECHNOLOGY
(An Autonomous Institution approved by UGC and affiliated to JNTUH)
Yamnampet, Ghatkesar, R.R.District-501 301.

III YEAR I SEMESTER COURSE STRUCTURE

S.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101CS07	Operating Systems	3	1	-	3	30	70
2.	101IT04	Design and Analysis of Algorithms	3	-	-	3	30	70
3.	101CS05	Computer Networks	3	1	-	3	30	70
4.	101IT05	Data warehousing and Data Mining	3	1	-	3	30	70
5.	101CS08	Automata and Compiler Design	3	1	-	3	30	70
6.	101IT06	Computer Graphics	3	1	-	3	30	70
7.	101MA71	Logical Reasoning-I	-	-	2	2	25	50
8.	101IT76	Group Project	-	-	3	1	25	50
9.	101CS87	Operating systems and Computer Networks Lab	-	-	3	2	25	50
10.	101IT77	Data warehousing and Data Mining Lab (DWDM Lab)	-	-	3	2	25	50
Total :			18	5	11	25	280	620

III YEAR II SEMESTER COURSE STRUCTURE

S.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101MB01	Managerial Economics & Financial Analysis	3	1	-	3	30	70
2.		Open Elective - I	2	2	-	2	30	70
3.	101IT07	Shell Programming & Scripting Languages	4	1	-	4	30	70
4.	101CS04	Software Engineering	3	1	-	3	30	70
5.	101CS06	Objective Oriented Analysis & Design	3	1	-	3	30	70
6.		Professional Elective – I	3	1	-	3	30	70
7.	101MA72	Quantitative Aptitude – I	-	-	2	2	25	50
8.	101IT78	Comprehensive Viva-Voce - II	-	-	-	1	-	50
9.	101CS76	Objective Oriented Analysis & Design Lab	-	-	3	2	25	50
10.	101IT79	Shell Programming & Scripting Languages Lab	-	-	3	2	25	50
Total :			18	7	8	25	255	620

S.No	Code	Open Elective - I	S.No	Code	Professional Elective – I
1.	101FL01	Spanish	1.	101IT16	Advanced Java Technologies
2.	101FL02	French	2.	101CS18	Advanced Computer Architecture
3.	101FL03	German	3.	101IT08	Middle Ware Technologies
4.	101MB55	Entrepreneurship			
5.	101BT41	Bio Informatics for CSIT			
6.	101EM06	Embedded and Real time Systems			

IV YEAR I SEMESTER COURSE STRUCTURE

Sl.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101MB02	Management Science	3	1	-	3	30	70
2.		Open Elective - II	3	-	-	3	30	70
3.	101IT11	Information Security	3	1	-	3	30	70
4.	101CS09	Software Quality Assurance and Testing	3	1	-	3	30	70
5.	101IT09	Web Technologies	4	1	-	4	30	70
6.		Professional Elective - II	3	1	-	3	30	70
7.	101MA73	Logical Reasoning -II	-	-	2	2	25	50
8.	101IT80	Pre – Project Seminar	-	-	-	1	50	-
9.	101IT81	Industry Oriented Mini Project	-	-	-	2	25	50
9.	101CS79	Software Quality Assurance and Testing lab	-	-	3	2	25	50
10	101IT82	Web Technologies Lab	-	-	3	2	25	50
			18	5	6	28	330	620

Sl.No	Code	Open Elective - II
1.	101MB56	Banking Operations ,Insurance and Risk Management
2.	101ME22	Operation Research
3.	101EM07	VLSI Design

Sl.No	Code	Professional Elective - II
1.	101CS12	Software Project Management
2.	101IT10	Neural Networks Fuzzy Logic
3.	101CS16	Mobile Computing

IV YEAR II SEMESTER COURSE STRUCTURE

Sl.No	Code	Subject	L	T	P/D	C	Max Marks	
							Int	Ext
1.	101IT15	Network Protocols	4	-	-	4	30	70
2.		Professional Elective – III	4	-	-	4	30	70
3.	101IT83	PROJECT	-	-	-	10	50	150
4.	101IT84	Comprehensive Viva-Voce - III	-	-	-	2	-	50
5.	101IT85	Technical Seminar	-	-	-	2	25	-
		Total :	8	-	-	22	135	340

Sl.No	Code	Professional Elective – III
1.	101IT12	Image Processing
2.	101IT13	E – Commerce
3.	101IT14	Multimedia
4.	101CS20	Network Management System

NOTE:

All the end examinations (Theory and Practical) are of three hours duration.

L-Theory

T-Tutorial

P-Practical/Drawing

C-Credits

**Syllabus for B. Tech. III Year I semester
Information Technology
OPERATING SYSTEMS**

Code: 101CS07

L	T	P/D	C
3	1	-	3

UNIT-I: Introduction:

Introduction to Operating System Concepts (including Multitasking, multiprogramming, multi user, Multithreading etc)., Types of Operating Systems: Batch operating system, Time-sharing systems, Distributed OS, Network OS, Real Time OS; Various Operating system services, architecture, System programs and calls.

UNIT-II: Process Management:

Process concept, process scheduling, operation on processes; CPU scheduling, scheduling criteria, scheduling algorithms -First Come First Serve (FCFS), Shortest-Job-First (SJF), Priority Scheduling, Round Robin(RR), Multilevel Queue Scheduling.
Case studies: unix, linux and windows.

UNIT-III: Process-Synchronization & Deadlocks:

Critical Section Problems, semaphores; methods for handling deadlocks-deadlock prevention, avoidance & detection; deadlock recovery.

UNIT-IV: Memory Management:

Logical & Physical Address Space, swapping, contiguous memory allocation, non-contiguous memory allocation paging and segmentation techniques, segmentation with paging; virtual memory management - Demand Paging & Page-Replacement Algorithms; Demand Segmentation.
Case studies: unix, linux and windows.

UNIT-V: File System:

Different types of files and their access methods, directory structures, various allocation methods, disk scheduling and management and its associated algorithms, Introduction to distributed file system.

UNIT-VI: I/O Systems:

I/O Hardware, Application I/O Interface, Kernel, Transforming I/O requests, Performance Issues.
Protection and security: access control list, capabilities, third party tools.

TEXT BOOKS:

- Operating System Concepts by Silberchatz Galvin, 8th edition.
- Modern Operating Systems by A. Tanenbaum, 1992, Prentice-Hall.
- Operating Systems Internals and Design Principles by William Stallings, 4th edition, 2001, Prentice-Hall

REFERENCE BOOKS:

- Operating System By Peterson , 1985, AW.
- Operating System By Milankovic, 1990, TMH.
- Operating System Incorporating With Unix & Windows By Colin Ritchie, 1974, TMH.
- Operating Systems by Mandrik & Donovan, TMH
- Operating Systems By Deitel, 1990, AWL.
- Operating Systems – Advanced Concepts By Mukesh Singhal , N.G. Shivaratri, 2003, T.M.H

**Syllabus for B. Tech. III Year I semester
Information Technology**

Code: 101IT04 DESIGN AND ANALYSIS OF ALGORITHMS

L	T	P/D	C
3	-	-	3

UNIT I : Introduction:

Algorithm, Psuedo code for expressing algorithms, Performance Analysis-Space complexity, Time complexity, Asymptotic Notation- Big oh notation, Omega notation, Theta notation and Little oh notation, Probabilistic analysis, Amortized analysis.

UNIT II: Divide and conquer:

General method , applications-Binary search, Quick sort, Merge sort, Strassen's matrix multiplication.

UNIT III: Greedy method:

General method, applications-Job sequencing with dead lines, 0/1 knapsack problem, Minimum cost spanning trees, Single source shortest path problem.

UNIT IV : Dynamic Programming:

General method, applications-Matrix chain multiplication, Optimal binary search trees, 0/1 knapsack problem, All pairs shortest path problem, Travelling sales person problem, Reliability design.

UNIT V : Backtracking:

General method, applications-n-queen problem, sum of subsets problem, graph coloring, Hamiltonian cycles.

Branch and Bound:

General method, applications - Travelling sales person problem, 0/1 knapsack problem- LC Branch and Bound solution, FIFO Branch and Bound solution.

UNIT VI: NP-Hard and NP-Complete problems:

Basic concepts, non deterministic algorithms, NP - Hard and NPComplete classes, Cook's theorem.

TEXT BOOKS :

1. Fundamentals of Computer Algorithms, Ellis Horowitz, Satraj Sahni and Rajasekharam, Galgotia publications pvt. Ltd.
2. Algorithm Design: Foundations, Analysis and Internet examples, M.T. Goodrich and R. Tomassia, John wiley and sons.

REFERENCES :

1. Introduction to Algorithms, second edition, T.H. Cormen, C.E. Leiserson, R.L. Rivest, and C. Stein, PHI Pvt. Ltd./ Pearson Education
2. Introduction to Design and Analysis of Algorithms A strategic approach, R.C.T. Lee, S.S. Tseng, R.C. Chang and T. Tsai, Mc Graw Hill.
3. Data structures and Algorithm Analysis in C++, Allen Weiss, Second edition, Pearson education.

4. Design and Analysis of algorithms, Aho, Ullman and Hopcroft, Pearson education.
5. Algorithms – Richard Johnson baugh and Marcus Schaefer, Pearson Education

**Syllabus for B. Tech. III Year I semester
Information Technology
COMPUTER NETWORKS**

Code: 101CS05

L	T	P/D	C
3	1	-	3

UNIT – I: Introduction :

OSI, TCP/IP and other networks models, Examples of Networks: Novell Networks ,Arpanet, Internet, Network Topologies WAN, LAN, MAN.

Physical Layer: Transmission media copper, twisted pair wireless, switching and encoding asynchronous communications;

UNIT – II: Data link layer :

Design issues in data link layer, Logical link control, framing, flow control, Protocol-stop and wait, Sliding Window, error detection and correction, CRC ,HDLC, ATM.

UNIT – III: Medium Access sub layer:

ALOHA, MAC addresses, Carrier sense multiple access, ISDN, IEEE 802.X Standard Ethernet, wireless LANS. Bridges

UNIT – IV: Network Layer :

Virtual circuit and Datagram subnets-Routing algorithm shortest path routing, Flooding, Hierarchical routing, Broad cast, Multi cast, distance vector routing.

UNIT – V:

Congestion, Control Algorithms – General Principles – of Congestion prevention policies. Internetworking: The Network layer in the internet and in the ATM Networks.

UNIT –VI: Transport Layer:

Transport Services, Connection management, TCP and UDP protocols; ATM AAL Layer Protocol.

Application Layer – network threats, confidentiality , authenticity, DES and RSA algorithms, Domain name system, Electronic Mail, WWW, Multi Media.

TEXT BOOKS

1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI
2. Data Communications and Networking – Behrouz A. Forouzan.Third Edition TMH.

REFERENCES

1. An Engineering Approach to Computer Networks-S.Keshav, 2nd Edition, Pearson Education
2. Understanding communications and Networks, 3rd Edition, W.A. Shay, Thomson

**Syllabus for B. Tech. III Year I semester
Information Technology
Code: 101IT05 DATAWARE HOUSING AND DATA MINING**

L	T	P/D	C
3	1	-	3

UNIT – I: Introduction :

Fundamentals of data mining, Data Mining Functionalities, Classification of Data Mining systems, Major issues in Data Mining, Data Warehouse and OLAP Technology for Data Mining Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture, Data Warehouse Implementation, Further Development of Data Cube Technology, From Data Warehousing to Data Mining,

UNIT – II: Data Preprocessing :

Introduction to machine learning, Needs Preprocessing the Data, Data Cleaning, Data Integration and Transformation, Data Reduction, Discretization and Concept Hierarchy Generation. Data Mining Primitives, Data Mining Query Languages, Architectures of Data Mining Systems,

UNIT – III: Concepts Description, Characterization and Comparison :

Data Generalization and Summarization-Based Characterization, Analytical Characterization: Analysis of Attribute Relevance, Mining Class Comparisons: Discriminating between Different Classes, Mining Descriptive Statistical Measures in Large Databases.

UNIT – IV: Mining Association Rules in Large Databases :

Association Rule Mining, Mining Single-Dimensional Boolean Association Rules from Transactional Databases, Mining Multilevel Association Rules from Transaction Databases, Mining Multidimensional Association Rules from Relational Databases and Data Warehouses, From Association Mining to Correlation Analysis, Constraint-Based Association Mining.

UNIT – V: Classification and Prediction :

Issues Regarding Classification and Prediction, Classification by Decision Tree Induction, Bayesian Classification, Classification by Backpropagation, Classification Based on Concepts from Association Rule Mining, Other Classification Methods, Prediction, Classifier Accuracy.

UNIT – VI: Cluster Analysis Introduction :

Types of Data in Cluster Analysis, A Categorization of Major Clustering Methods, Partitioning Methods, Density-Based Methods, Grid-Based Methods, Model-Based Clustering Methods, Outlier Analysis.

TEXT BOOK :

1. Data Mining – Concepts and Techniques - JIAWEI HAN & MICHELINE KAMBER
Harcourt India.

REFERENCES :

1. Data Mining Introductory and advanced topics –MARGARET H DUNHAM, PEARSON EDUCATION
2. Data Mining Techniques – ARUN K PUJARI, University Press.
3. Data Warehousing in the Real World – SAM ANAHORY & DENNIS MURRAY. Pearson Edn Asia.
4. Data Warehousing Fundamentals – PAULRAJ PONNAIAH WILEY STUDENT EDITION.
5. The Data Warehouse Life cycle Tool kit – RALPH KIMBALL WILEY STUDENT EDITION

**Syllabus for B. Tech. III Year I semester
Information Technology**

Code: 101CS08 AUTOMATA THEORY and COMPLIER DESIGN

L	T	P/D	C
3	1	-	3

UNIT - I

Formal Language and Regular Expressions: Languages, Definition, regular expressions, Regular sets, identity rules.

Finite Automata: DFA, NFA, NFA with ϵ transitions - Significance, acceptance of languages, NFA to DFA conversion, minimization of DFA, Finite Automata with output-Moore and Mealy machines. Constructing finite Automata for a given regular expressions, Conversion of Finite Automata to Regular expressions.

UNIT - II

Grammar Formalism: Chomsky hierarchy of languages, Context free grammar, derivation trees, and sentential forms. Right most and leftmost derivation of strings, Ambiguity in context free grammars. Minimization of Context Free Grammars. Chomsky normal form, Greiback normal form.

Push down Automata: Push down automata, definition, model, acceptance of CFL, Acceptance by final state and acceptance by empty stack and its equivalence. Equivalence of CFL and PDA,

UNIT - III

Compiler: phases of compiler, difference between phase and a pass, lexical analyzer. Top down parsing: ambiguity, LL(1) grammars , LL(1) parsing

UNIT - IV

Bottom up parsing: handle pruning, shift reduce parser, LR Parsers, LALR parsing, parsing ambiguous grammars.
Semantics: Syntax directed translation, S-attributed and L-attributed grammars

UNIT - V

Intermediate code Generation – intermediate languages, Implementation of 3-address statements, translation of simple statements and control flow statements.
Type checking, equivalence of type expressions, type conversions, overloading of functions and operations.

UNIT - VI

Code optimization: Principal sources of optimization, optimization of basic blocks, peephole optimization, flow graphs, Data flow analysis of flow graphs

Code generation: Machine dependent code generation, object code forms, generic code generation algorithm, Using DAG representation of Basic Block

TEXT BOOKS

1. “Introduction to Automata Theory Languages and Computation”. Hopcroft H.E. and Ullman J. D. Pearson Education
2. Compilers Principles, Techniques and Tools Aho, Ullman, Ravisethi, Pearson Education.

REFERENCES

1. Introduction to Computer Theory, Daniel I.A. Cohen, John Wiley.
2. Introduction to languages and the Theory of Computation, John C Martin, TMH
3. “Elements of Theory of Computation”, Lewis H.P. & Papadimition C.H. Pearson /PHI.
4. Theory of Computer Science – Automata languages and computation -Mishra and Chandrashekar, 2nd edition, PHI
5. Modern Compiler Construction in C , Andrew W.Appel Cambridge University Press.
6. Compiler Construction, LOUDEN, Thomson.
7. Introduction to Theory of Computation –Sipser 2nd edition Thomson

**Syllabus for B. Tech. III Year I semester
Information Technology
COMPUTER GRAPHICS**

Code: 101IT06

L	T	P/D	C
3	1	-	3

UNIT I: Introduction:

Application areas of Computer Graphics, overview of graphics systems, video-display devices, raster-scan systems, random scan systems, graphics monitors and work stations and input devices. Output primitives : Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms.

UNIT II: Filled area primitives:

Scan line polygon fill algorithm, boundary-fill and flood-fill algorithms 2-D geometrical transforms : Translation, scaling, rotation, reflection and shear transformations, matrix representations and homogeneous coordinates, composite transforms, transformations between coordinate systems.

UNIT III : 2-D Viewing :

The viewing pipeline, viewing coordinate reference frame, window to view-port coordinate transformation, viewing functions, Cohen-Sutherland and Cyrus-beck line clipping algorithms, Sutherland – Hodgeman polygon clipping algorithm

UNIT IV : 3-D Object Representation :

Polygon surfaces, quadric surfaces, spline representation, Hermite curve, Bezier curve and B-Spline curves, Bezier and B-Spline surfaces. Basic illumination models, polygon rendering methods. 3-D Geometric transformations : Translation, rotation, scaling, reflection and shear transformations, composite transformations.

UNIT V : 3-D Viewing :

Viewing pipeline, viewing coordinates, view volume and general projection transforms and clipping. Visible surface detection methods : Classification, back-face detection, depth-buffer, scan-line, depth sorting, BSP-tree methods, area sub-division and octree methods

UNIT VI : Computer Animation :

Design of animation sequence, general computer animation functions, raster animation, computer animation languages, key frame systems, motion specifications. (p.nos 604- 16 of text book -1, chapter 21 of text book-2).

TEXT BOOKS :

1. “Computer Graphics C version”, Donald Hearn and M.Pauline Baker, Pearson Education.
2. “Computer Graphics Principles & practice”, second edition in C, Foley, VanDam, Feiner and Hughes, Pearson Education.

REFERENCES :

1. "Computer Graphics", second Edition, Donald Hearn and M.Pauline Baker, PHI/Pearson Education.
2. "Computer Graphics Second edition", Zhigand xiang, Roy Plastock, Schaum's outlines, Tata Mc- Graw hill edition.
3. Procedural elements for Computer Graphics, David F Rogers, Tata Mc Graw hill, 2nd edition.
4. "Principles of Interactive Computer Graphics", Neuman and Sproul, TMH.
5. Principles of Computer Graphics, Shalini Govil, Pai, 2005, Springer.
6. Computer Graphics, Steven Harrington, TMH

Syllabus for B. Tech. III Year I semester
Information Technology
Code: 101MA71
LOGICAL REASONING-I
(Common to all branches)

L	T	P/D	C
-	-	2	2

UNIT – I

Series Completion: Number Series, Alphabet Series, Alpha – Numeric Series.

UNIT – II

Analogy: Completing the Analogous Pair, Simple Analogy, Choosing the Analogous pair, Double Analogy, Word Analogy, and Number Analogy.

UNIT – III

Classification / Odd One Out: Word Classification, Number Classification, Letter Classification.

UNIT – IV

Coding – Decoding: Letter Coding, Number Coding, Matrix Coding, Substitution, Deciphering Message Word Codes, Jumbled Coding.

UNIT – V

Blood Relations: Deciphering Jumbled up Descriptions, Relation Puzzle – Direction sense test.

UNIT – VI

Number, Ranking & Time Sequence Test – Arithmetical Reasoning – Mathematical Operations.

Text Book: Verbal and Non Verbal Reasoning by R.S.Agarwal.

**Syllabus for B. Tech. III Year I semester
Information Technology
Code: 101CS87 Operating systems and Computer Networks Lab**

L	T	P/D	C
-	-	3	2

PART – A

1 Simulate the following CPU scheduling algorithms

a)Round Robin b)SJF c)FCFS d)Priority

2) Simulate all file allocation strategies

a) Sequential b) Indexed c) Linked

3) Simulate MVT and MFT

4) Simulate Bankers Algorithm for Dead lock Avoidance

5) Simulate Bankers Algorithm for Dead lock Prevention

6) Simulate Page replacement Algorithms

a)FIFO b)LRU c)LFU

7) Simulate paging Technique of memory management

8) Simulate all File organization techniques

a)Single Level Directory b)Two Level c) Hierarchical d)DAG

PART - B

1. Implement the data link layer framing methods such as character, character stuffing and bit stuffing.

2. Implement on a data set of characters the three CRC polynomials - CRC 12, CRC 16 and CRC CCIP.

3. Implement Dijkstra's algorithm to compute the Shortest path thru a graph.

4. Take an example subnet graph with weights indicating delay between nodes. Now obtain Routing table for each node using distance vector routing algorithm.

5. Write a program to implement S-DES coding.

6. Using RSA algorithm, encrypt a text data and Decrypt the same.

**Syllabus for B. Tech. III Year I semester
Information Technology
Code: 101IT77 DATA WAREHOUSING AND DATA MINING LAB**

L	T	P/D	C
-	-	3	2

Exercises

1. Build a Data Warehouse to perform filter transformation for the employee database.
2. Add the commission of 1000 Rs in the Salary field of Employee table using Expression Transformation.
3. Using Aggregator transformation display the average salary of employees in each departments.
4. Using Joiner transformation display the Sailor_Name form Sailors table and Boat_Name from Boats table in a new table.
5. Compare the GRI and Apriori usage (Prepare a sample data set in Spread Sheet)
6. Determine the Drugs importance w.r.t. Age, Cholestrol and BP using C 5.0
7. Predict the accuracy of the test data set using Neural Net model using a Case Study of Botanical data set.
8. Using Kohonen model of classification determine the Classifier and the Test data and predict the test data set using classified data set.
9. Compare the C 5.0 and Neural Net using the sample data.

Syllabus for B. Tech. III Year II semester
Information Technology
MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS
(Common to all branches)

Code: 101MB01

L	T	P/D	C
3	1	-	3

UNIT – I: INTRODUCTION TO MANAGERIAL ECONOMICS:

Definition, Nature and Scope of Business Economics– Demand Analysis: Demand Determinants, Law of Demand and its exceptions. Elasticity of Demand and Demand Forecasting.

UNIT – II: THEORY OF PRODUCTION AND COST ANALYSIS:

Production Function – Isoquants and Isocosts, Internal and External Economies of Scale, Laws of returns. Cost Analysis: Cost concepts, different types of costs, cost control and cost efficiency. Break-even Analysis (BEA)-Determination of Break-Even Point (simple problems).

UNIT – III: INTRODUCTION TO MARKETS:

Market structures: Types of competition, Features of Perfect competition, Monopoly and Monopolistic Competition. Pricing strategies, transfer pricing and performance measurement, Price-Output Determination in case of Perfect Competition and Monopoly. Business Environment: forms of Business organization, Features of Joint Stock Company, Public Enterprises and their types. Liberalization, Globalization and Privatization (LPG).

UNIT – IV: FUNDAMENTALS OF FINANCIAL ACCOUNTING:

Concepts and conventions, principles of Double-Entry, Book Keeping, Journal, Ledger, Trial Balance, Final Accounts - Trading Account, Profit and Loss Account and Balance Sheet with simple adjustments.

UNIT – V: CAPITAL BUDGETING TECHNIQUES:

Nature and scope of Capital Budgeting, Methods of Capital Budgeting: Traditional methods and Discounting Cash Flow methods.

UNIT – VI: RATIO ANALYSIS:

Introduction to Ratio analysis – Leverage ratios – Liquidity ratios – Turnover ratios – Profitability ratios, Du-point chart. (Simple problems)

REFERENCES:

1. Ambrish Gupta, Financial Accounting for Management, Pearson Education, New Delhi.
2. Aryasri: Managerial Economics and Financial Analysis, 2/e, TMH, 2005.
3. H. Craig Peterson & W. Cris Lewis, Managerial Economics, PHI, 4th Ed.
4. Suma Damodaran, Managerial Economics, Oxford University Press.
5. Lipsey & Chrystel, Economics, Oxford University Press.

**Syllabus for B. Tech. III Year II semester
Information Technology**

Code: 101IT07 SHELL PROGRAMMING & SCRIPTING LANGUAGES

L	T	P/D	C
4	1	-	4

UNIT I: Introduction to Unix:

Architecture of Unix, Features of Unix , Unix utilities – process utilities, disk utilities, networking commands, text processing utilities and backup utilities.

Introduction to unix file system, vi editor, file handling utilities, security by file permissions.

UNIT II : Working with the Bash Shell :

Introduction, Shell responsibilities, pipes and input redirection, output redirection, here documents, running a shell script, shell as a programming language, shell metacharacters, filename substitution, shell variables, command substitution, shell commands, the environment, quoting, test command, control structures, arithmetic in shell, Shell script examples, functions, debugging shell scripts.

UNIT III: Introduction to PERL and Scripting

Scripts and Programs, Origin of Scripting, Scripting Today, Characteristics of Scripting Languages, Uses for Scripting Languages, Web Scripting, and the universe of Scripting Languages. PERL – Names and Values, Variables, Scalar Expressions, Control Structures, arrays, list, hashes, strings, pattern and regular expressions, subroutines.

UNIT IV : Advanced PERL

Finer points of looping, pack and unpack, file system, eval, data structures, packages, modules, objects, interfacing to the operating system, creating internet ware applications, dirty hands internet programming, security issues.

UNIT V : PYTHON

Introduction to python language, python-syntax, statements, functions, Built-in-functions and Methods, Modules in python, Exception Handling, Integrated Web Applications in python --- Building Small, Efficient python web Systems, Web Application Framework.

UNIT VI : PHP Basics

PHP Basics – Features, Embedding PHP Code in your Web pages, Outputting the data to the browser, Datatypes, Variables, Constants, expressions, string interpolation, control Structures. Function, Creating a Function, Function Libraries, Arrays, Strings and Regular Expressions.

TEXT BOOKS :

1. Your Unix the ultimate guide, Sumitabha Das, TMH. 2nd Edition.
2. The World of Scripting Languages, David Barron, Wiley Publications.
3. The Practical Programming Python, O'Relly Publications.

REFERENCES :

1. Unix and shell Programming Behrouz A. Forouzan, Richard F. Gilberg.Thomson
2. Perl by Example, E.Quigley, Pearson Education.
3. Programming Perl, Larry Wall, T.Christiansen and J.Orwant, O'Reilly, SPD.
4. PHP and MySQL by Example, E.Quigley, Prentice Hall (Pearson).
5. Perl Power, J.P.Flynt, Cengaghe Learning.
6. PHP Programming solutions, V.Vaswani, TMH.
7. Beginning PHP and MySQL, 3rd Edition, Jason Gilmore, Apress Publications.

**Syllabus for B. Tech. III Year II semester
Information Technology
SOFTWARE ENGINEERING**

Code: 101CS04

L	T	P/D	C
3	1	-	3

UNIT I: Introduction to Software Engineering :

The evolving role of software, Changing Nature of Software, Software myths. A Generic view of process : Software engineering- A layered technology, a process framework, The Capability Maturity Model Integration (CMMI), Process patterns, process assessment, personal and team process models. Process models : The waterfall model, Incremental process models, Evolutionary process models, The Unified process.

UNIT II: Software Requirements :

Functional and non-functional requirements, User requirements, System requirements, Interface specification, the software requirements document. Requirements engineering process : Feasibility studies, Requirements elicitation and analysis, Requirements validation, Requirements management.

UNIT III: System models :

Context Models, Behavioral models, Data models, Object models, structured methods. Design Engineering : Design process and Design quality, Design concepts, the design model. Creating an architectural design : Software architecture, Data design, Architectural styles and patterns, Architectural Design.

UNIT IV: Object-Oriented Design :

Objects and object classes, An Object-Oriented design process, Design evolution. Performing User interface design : Golden rules, User interface analysis and design, interface analysis, interface design steps, Design evaluation. Testing Strategies : A strategic approach to software testing, test strategies for conventional software, Black-Box and White-Box testing, Validation testing, System testing, the art of Debugging.

UNIT V: Product metrics :

Software Quality, Metrics for Analysis Model, Metrics for Design Model, Metrics for source code, Metrics for testing, Metrics for maintenance. Metrics for Process and Products : Software Measurement, Metrics for software quality. Risk management : Reactive vs. Proactive Risk strategies, software risks, Risk identification, Risk projection, Risk refinement, RMMM, RMMM Plan.

UNIT VI: Quality Management :

Quality concepts, Software quality assurance, Software Reviews, Formal technical reviews, Statistical Software quality Assurance, Software reliability, The ISO 9000 quality standards.

TEXT BOOKS

1. Software Engineering, A practitioner's Approach- Roger S. Pressman, 6th edition. McGrawHill International Edition.
2. Software Engineering- Sommerville, 7th edition, Pearson education.

REFERENCES

1. Software Engineering- K.K. Agarwal & Yogesh Singh, New Age International Publishers
2. Software Engineering, an Engineering approach- James F. Peters, Witold Pedrycz, John Wiely.
3. Systems Analysis and Design- Shely Cashman Rosenblatt, Thomson Publications.
4. Software Engineering principles and practice- Waman S Jawadekar, The McGraw-Hill Companies

**Syllabus for B. Tech. III Year II semester
Information Technology**

Code: 101CS06 OBJECT ORIENTED ANALYSIS & DESIGN

L	T	P/D	C
3	1	-	3

UNIT - I

Introduction to UML: Importance of modeling, principles of modeling, object oriented modeling, conceptual model of the UML, Architecture, Software Development Life Cycle.

UNIT - II

Basic Structural Modeling: Classes, Relationships, common Mechanisms, and diagrams.
Advanced Structural Modeling: Advanced classes, advanced relationships, Interfaces, Types and Roles, Packages.

UNIT - III

Class & Object Diagrams: Terms, concepts, modeling techniques for Class & Object Diagrams.

UNIT - IV

Basic Behavioral Modeling-I: Interactions, Interaction diagrams, Use cases, Use case Diagrams, Activity Diagrams.

UNIT-V

Advanced Behavioral Modeling: Events and signals, state machines, processes and Threads, time and space, state chart diagrams.

UNIT - VI

Architectural Modeling: Component, Deployment, Component diagrams and Deployment diagrams.
CASE STUDY on Unified Library Application.

TEXT BOOKS:

1. Grady Booch, James Rumbaugh, Ivar Jacobson : The Unified Modeling Language User Guide, Pearson Education.
2. Hans-Erik Eriksson, Magnus Penker, Brian Lyons, David Fado: UML 2 Toolkit, WILEY-Dreamtech India Pvt. Ltd.

REFERENCES:

1. Meilir Page-Jones: Fundamentals of Object Oriented Design in UML, Pearson Education.
2. Pascal Roques: Modeling Software Systems Using UML2, WILEY-Dreamtech India Pvt. Ltd.
3. Atul Kahate: Object Oriented Analysis & Design, The McGraw-Hill Companies.
4. Mark Priestley: Practical Object-Oriented Design with UML, TATA McGrawHill
5. Craig Larman Applying UML and Patterns: An introduction to Object – Oriented Analysis and Design and Unified Process, Pearson Education

**Syllabus for B. Tech. III Year II semester
Information Technology
QUANTITATIVE APTITUDE
(Common to all branches)**

Code: 101MA72	L	T	P/D	C
	-	-	2	2

UNIT I

Number System: Test for Divisibility, Test of prime number, Division and Remainder – HCF and LCM of Numbers - Fractions.

UNIT II

Average: Average of different groups, Replacement of some of the items - Percentage - Profit and Loss.

UNIT III

Ratio and Proportion: Properties of Ratio, Comparison of Ratios, Useful Simple Results on Proportion – Partnership and Share – Mixtures.

UNIT IV

Simple Interest: Effect of change of P, R and T on Simple Interest - Compound Interest: Conversion Period, Difference between Compound Interest and Simple Interest – Time and Work – Time and Distance.

UNIT V

Mensuration: Area of Plane Figures, Volume and Surface Area of Solid Figures .

UNIT VI

Data Interpretation: Tabulation, Bar Graphs, Pie Charts, Line Graphs.

TEXT BOOKS:

1. Quantitative Aptitude by R.S.Agarwal
2. Quantitative Aptitude by Abhijit Guha

Syllabus for B. Tech. III Year II semester
Information Technology
OBJECT ORIENTED ANALYSIS & DESIGN LAB

Code: 101CS76

L	T	P/D	C
-	-	3	2

1. The student should take up the case study of Unified Library application which is mentioned in the theory, and Model it in different views i.e. Use case view, logical view, component view, Deployment view, Database design, forward and Reverse Engineering, and Generation of documentation of the project.
2. Student has to take up another case study of his/her own interest and do the same whatever mentioned in first problem. Some of the ideas regarding case studies are given in reference books which were mentioned in theory syllabus can be referred for some idea.

Case studies:

1. ATM System
2. Online Ticket Reservation
3. Course Registration System
4. E- Book Shop

**Syllabus for B. Tech. III Year II semester
Information Technology
SHELL PROGRAMMING & SCRIPTING LANGUAGES LAB**

Code: 101IT79	L	T	P/D	C
	-	-	3	2

1. Write a shell script that accepts a filename, starting and ending line numbers as arguments and displays all the lines between the given line numbers.
2. Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.
3. Write a shell script that displays all the files in the current directory to which the user has read, write and execute permissions.
4. Write a shell script that receives any number of filenames as arguments, checks if every argument supplied is a file or a directory and reports accordingly. Whenever the argument is a file the number of lines on it is also reported.
5. Write a shell script that accepts a list of filenames as its arguments, counts and reports the occurrence of each word that is present in the first argument file on other argument files.
6. Write a shell script to list all of the directory files in a directory.
7. Write a shell script to find factorial of a given integer.
8. Write an awk script to count the number of lines in a file that do not contain vowels.
9. Write an awk script to find the number of characters, words and lines in a file.
10. a. Write a perl program that computes the circumference of a circle by prompt for and accept a radius from the person running the program.
 b. Write a perl program that reads a string and a number, and prints the string the number of times indicated by the number on separate lines. (Hint: use the "x" operator.)
11. a. Write a perl program that reads a list of strings on separate lines and prints out the list in reverse order. If you're reading the list from the terminal, you'll probably need to delimit the end of the list by pressing your end-of-file character, probably CTRL-D under UNIX or Plan 9; often CTRL-Z elsewhere.
 b. Write a perl program that reads a number and then a list of strings (all on separate lines), and then prints one of the lines from the list as selected by the number.
12. a. Write a perl program that reads in a list of strings on separate lines and then prints out the list of strings in reverse order - without using reverse on the list. (Recall that <STDIN> will read a list of strings on separate lines when used in an array context.)

- b. Write a perl program that prints a table of numbers and their squares from zero to 32. Try to come up with a way where you don't need to have all the numbers from 0 to 32 in a list, and then try one where you do. (For nice looking output, `printf "%5g %8g\n", $a, $b` prints \$a as a five-column number and \$b as an eight-column number.)
- c. Write a program that reads in a string, then prints that string and its mapped value according to the mapping presented in the following table:

Input	Output
Red	apple
Green	leaves
Blue	Ocean
Yellow	lemon

13. a. Write a program that acts like `cat`, but reverses the order of the lines of all the lines from all the files specified on the command line or all the lines from standard input if no files are specified. (Some systems have a utility like this named `tac`.)
- b. Construct a regular expression that matches:
- at least one a followed by any number of b's
 - any number of backslashes followed by any number of asterisks (any number might be zero)
 - three consecutive copies of whatever is contained in `$whatever`
 - any five characters, including newline
 - the same word written two or more times in a row (with possibly varying intervening whitespace), where "word" is defined as a nonempty sequence of nonwhitespace characters

14. A macro processor reads a file containing macro definitions and uses, and replaces the uses with the definitions. A macro is a named replacement text, usually with parameters to substitute. For instance, if assignment four reads this input:

This is the first line.

```
!define frank=Mr. Frank #1 Stein
For more information, see @frank(N.),
@frank("Steiney"), Jr., or @frank(Furter), Esq.
```

It should output this:

This is the first line.

For more information, see Mr. Frank N. Stein,
Mr. Frank "Steiney" Stein, Jr., or Mr. Frank Furter Stein, Esq.

15. a. Write a python program to find the given number is positive or not.
b. Write a python program to find roots for $ax^2+bx+c=0$ using built-in functions.
c. Write a python program which opens a file and writes the content in the file and comes out gracefully (file i/o exceptions)
16. Write a python program to build a calculator using module based approach.
Consider an arithmetic operation as a module.

Write a PHP code to display Information pertaining to the php content of the Web browser.
17. Write a PHP code to implement usage of Control flow statement to solve real time problems.
18. Write a PHP code to interact with files using FILO I/O modules and count no of words in a given file.

**Syllabus for B. Tech. III Year II semester
Information Technology
Open Elective - I
SPANISH
(Common to all branches)**

Code:101FL01

L	T	P/D	C
2	2	-	2

Objectives: The objectives of this course almost correspond to the A1 level of the Common European Framework of Reference for languages

A) Aims and Objectives of the Course

- i) To develop the following skills: Listening, speaking, reading & writing.
Learners should be able to
 - a) listen and comprehend elementary structures of the spoken language.
 - b) participate in simple conversations in different situations of every day life.
 - c) read and understand simple texts.
 - d) write sentences and short paragraphs on general topics and situations.

- ii) To develop creative aspect in language learning i.e. the ability to work out different patterns and combinations with the help of basic grammatical structures and lexical items.

- iii) To introduce the learners to aspects of life and culture of Spanish and Latin American people.

B) Course Contents

Functional Aspects

- UNIT-1 Greetings, introductions, identifying others; tools to ask meaning, pronunciation and spellings; different nationalities and their languages; Hispanic names, family relations and professions; days of the week, months.
- Grammatical Aspects**
Basic structure of spelling and pronunciation; present indicative of the regular verbs ('ar'/er/ir,) and 'querer'; subject pronouns; interrogative sentences with 'Por qué', and 'quién'; causal phrase with 'porque'; 'ser' and 'estar'; negative sentences; adjectives of nationality.
- UNIT-2 Ordinal and cardinal numbers; quantities; to go shopping, identifying material, color, size etc; to go to a restaurant, food habits of Spanish and Latin American people.
- Grammatical Aspects**
Gender and number of nouns and adjectives; the verb 'tener'; interrogative sentences; demonstrative and qualitative adjectives.
- UNIT-3 To express opinions on something, contradict someone in a modest ways, suggest something, to value things aesthetically and intellectually; expression of likes and dislikes; expression and reaction to certain things, (agreement or disagreement).
- Grammatical Aspects**
Qualitative adjectives, forms and usage, gradations, superlative adjectives, exclamatory sentences; the verb 'gustar', forms and syntax; personal pronouns; definite and indefinite pronouns, direct object pronouns; prepositions; verbs like 'parecer' and 'encontrar', their form and syntax, interrogative pronouns.
- UNIT 4 Invitations; accepting and rejecting invitations; how to fix an appointment;
- Grammatical Aspects**
Present indicative of irregular verbs, expressions with 'tener' estar prepositional pronouns; interrogative sentences.
- UNIT 5 Expression of time; Spanish and Latin American time tables and comparison with Indian time tables.
- Grammatical Aspects**
Time with 'ser'
- UNIT 6 Expressions relating climate, weather of the day
Seasons. Vacations
- Grammatical Aspects**
Expressions with the verbs 'ser' and 'hacer'

Techniques of Instruction

Without prejudice to the specific language teaching approach adopted by the teacher, the following parameters are suggested for realizing the above objectives and contents:

1. To avoid monotony in the classroom and to reduce the role of mechanical reproduction of the material learnt, stress should be laid on creativity in the classroom.
2. Use of modern technical aids, such as slide projectors, tape recorders, computers, CD-ROMs etc. should be encouraged.
3. Supplementary teaching material on cultural aspects, such as art, films etc. may be used in the classroom. An intercultural approach should be encouraged.
4. Methods/techniques should be employed, which would encourage the learners to do independent work by way of reading writing and self-correction.

Books recommended:

1. ELE INICIAL 1
2. Espanol sin Fronteras, A. Sánchez, M. Ríos, J.A. Metalla. SGEL, Madrid, 1997.
3. Entre Nosotros A. Sánchez, M. Ríos, J.A. Metalla. SGEL, Madrid, 1997.

**Syllabus for B. Tech. III Year II semester
Information Technology
Open Elective - I
FRENCH
(Common to all branches)**

Code: 101FL02

L	T	P/D	C
2	2	-	2

***UNITE – 1* UN PRINTEMPS A PARIS**

VOCABULAIRE : Professions et nationalités, vie quotidienne et loisirs,
Descriptions physiques et psychologiques, nombres cardinaux.

UNITE – 2

GRAMMAIRE : Articles définis et indéfinis, genre et nombre des noms et des
Adjectifs, interrogation et négation, conjugaison du présent.

PHONETIQUE : Intonation, liaison, voyelles orales et nasales.

UNITE – 3

COMMUNICATION : Faire connaissance, inviter et répondre à une invitation, décrire
les personnes.

CIVILISATION : Paris, monuments et lieux publics. La vie de quatre parisiens
De professions différentes.

***UNITE- 4* AVENTURE EN BOURGOGNE**

VOCABULAIRE : Logement et nourriture, vêtements et couleurs, fêtes et
Faits divers, nombres ordinaux.

GRAMMAIRE : Articles partitifs, adjectifs démonstratifs et possessifs,
Prépositions et adverbes de quantité et de lieu, pronoms
Toniques, l'impératif, verbes pronominaux

UNITE – 5

PHONETIQUE : Intonation, semi-voyelles, liaison, consonnes sonores et
sourdes

COMMUNICATION : Exprimer l'ordre et l'obligation, demander et
commander, évaluer et apprécier, féliciter et remercier.

UNITE – 6

CIVILISATION : Une région de France : la Bourgogne, vie quotidienne à la

campagne.

In addition Passé Composé will be introduced in the UNITE 2

Text Book : LE NOUVEAU SANS FRONTIERES – 1 (Text Book and
 (UNIT 1 & UNIT 2) Exercise Book published by CLE INTERNATINAL –
 Phillippe
 Dominique et al.

SCHEME OF EXAMINATION:

Internal Assessment 30 marks
 Written Examination - 20 marks
 Viva Voce - 10 marks

Final Written Examination: Grammar, Communication & Translation 70marks
 Written Examination - 50 marks Viva voce -20 marks

**Syllabus for B. Tech. III Year II semester
Information Technology
Open Elective - I
GERMAN
(Common to all branches)**

Code: 101FL03

DRAFT

L	T	P/D	C
2	2	-	2

DEUTSCH FUR ANFANGER (German for beginners)
Syllabus

1. OBJECTIVE: To introduce the learners to basic German and to acquaint them with German culture. The learners should be able to express themselves in simple sentences on a few day-to-day situations.
2. DURATION: I-Semester
3. CLASSROOM STRENGTH: preferably not exceeding 30
4. MODE: Face-to-Face classroom interaction
5. TEACHING HOUSE: 2 HOURS and 2 TUTORIALS / WEEK

6. COURSE CONTENT:

UNIT 1

- Definite and indefinite articles (including negation)
- Noun: Gender and plural forms, cases (nominative, accusative, dative and genitive)

UNIT 2

- Verb: strong & weak verbs, verbs with separable and inseparable prefixes, modal verbs, position of verb in the main and subordinate clauses, auxiliary verbs, reflexive verbs in accusative and dative cases, imperative constructions.

UNIT 3

- Pronouns: personal, possessive, reflexive, interrogative and demonstrative
- Prepositions: with the accusative, dative and with both these cases

UNIT 4

- Adjective: declension with the
 - Indefinite article
 - Definite article
 - Without article
 - With the indefinite pronoun
 - Degrees of comparison (also adverbs), ordinal numbers, adjectives as nouns
- Conjunctions: subordinating and coordinating with respect to the position of the verb

UNIT 5

- Pretaritim of sein and haben
- Perfect tense

UNIT 6

- Negatin: of a sentence and of words therein.
- Sentence structure: general principles observed in German language.

7. **READING LIST:** One of the following books shall be used (depending upon the availability of the book)

Text book to be recommended out of the following.

- Braun, K., Nieder, L., Schmoe, F.1977. Deutsch als Fremdsprache I. A. Ernst Klett Verlag, Stuttgart.
- Schulz, D., Griesbach, H., 1968. Deutsche Sprachlehre fur Auslander. Max Hueber Verlag. Munchen.
- Hieber, W. 1987. Lernziel Deutsch (Special Indian Edition).Max Hueber Verlag. Munchen
- Neuneer, G., et al. 1979. Deutsch Aktiv. Langenscheidt. Berlin
- Schapers, R., et al. 1980. Grundkurs Deutsch. I. Verlag fur Deutsch. Munchen
- Schapers, R., et al. 1981 Deutsch 2000 I. Max Hueber Verlag. Munchen
- Haussermann, U. et al. 1995 Sprachkurs Deutsch. Verlag Moritz Diesterweg. Frankfurt/Main.
- Muller, M., et al. 2001 Moment mal ! Langenscheidt. Berlin.
- Jutta Muller, Thomas Storz, 2006. Laguna. Heuber Veerlag, Ismaning. Deutschland.
- Hermann Funk, Christina Kuhn, Oliver Bayerlein., Studio d A 1. 2005 Comelsen Verlag, Berlin.
- Rosa-Marie Dallapiazza, Eduard von Jan, Till Schonherr, unter Mitarbeit von Jutta Orth-Chambah. Tangram aktuell 1 – Lektion 1 – 4, Lektion 5 – 8 2009. Max Hueber Verlag. Munchen.

8. SCHEME OF THE EXAMINATION:

Duration of written papers: 3 hours each

Paper 1 :Grammar and Translation (German > English and vice versa) 100 marks

Paper II: Reading comprehension, letter writing / short easay. 100 marks

Paper III: Viva voce 100 marks

The minimum marks required for passing in EACH paper: 40 / 100

**Syllabus for B.Tech. III Year II semester
Information Technology
Open Elective - I
ENTREPRENEURSHIP**

Code: 101MB55

L	T	P/D	C
2	2	-	2

The objective of the course is to make students understand the nature of entrepreneurship, and its importance to business.

UNIT I

NATURE OF ENTREPRENEURSHIP: Definition of entrepreneurship, Evolution of entrepreneurship Concept Categories of Entrepreneurship, Entrepreneurial Propensity, Entrepreneurial potential, Entrepreneurial Orientation, Schools of thought on Entrepreneurship, Essential features of Entrepreneurship, attitude and leadership of Entrepreneur, Characteristics of entrepreneur, Qualities and skills, functions of entrepreneur

UNIT II

FORMS OF ENTREPRENEURSHIP: Small Business, Importance in Indian Economy, Types of ownership, sole trading, partnership, Joint Stock Company, Important features of Various types of businesses, corporate entrepreneurship, entrepreneurship, Role of Government in the promotion of Entrepreneur, State Enterprises in India.

UNIT III

ASPECTS OF PROMOTION: Opportunity Analysis, SWOT Analysis, Internal and External Environment Analysis, Technological Competitiveness, Entrepreneurs and legal regulatory systems.

UNIT IV

PROJECT PLANNING AND FEASIBILITY STUDIES: The Concept of Project, Project Life Cycle, Project Planning, Feasibility, SWOT Analysis, Product and Process Development, Major steps in product development.

UNIT V

FINANCIAL ASPECTS OF THE ENTREPRENEURSHIP: Source of Capital, Debt-Equity Financing Commercial Banks, Bank Loans, Assessment of Benefits and Costs, Informal Agencies In financing entrepreneurs, Government Grants and Subsidies, Types of Investors and Private Offerings. Entrepreneurial Strategy: Generation of new entry opportunity, Decisions under Uncertainty, entry strategy, new entry exploitation, environmental instability and First-Mover disadvantages, Risk Reduction strategies, Market scope strategy, Imitation strategies and Managing Newness, Marketing strategies for start-ups, Operational complexities in start-ups

UNIT VI

WOMEN ENTREPRENEURSHIP: Introduction, Problems faced by Women Entrepreneurs in India, Strategies to overcome obstacles faced by women entrepreneurs. The dynamic need, entrepreneurship in a Developing economy, the scope of

entrepreneurship among women, promotional efforts supporting women entrepreneurs in India, Issues of employment generation.

References:

- H. Nandan, Fundamentals of Entrepreneurship, Prentice Hall of India, First Edition, New Delhi, 2007.
- Robert D Hisrich, Michael P Peters, Dean A Shepherd, Entrepreneurship, Sixth Edition, New Delhi, 2006.
- Alfred E. Osborne, Entrepreneur's Toolkit, Harvard Business Essentials, HBS Press, USA, 2005.
- Madhurima Lall, Shikha Sahai, Entrepreneurship, Excel Books, First Edition, New Delhi, 2006.
- S.S. Khanka, Entrepreneurial Development, S. Chand and Company Limited, New Delhi, 2007.
- Thomas W. Zimmerer, Norman M. Scarborough, Essentials of Entrepreneurship And Small Business Management, Fourth Edition, Pearson, New Delhi, 2006
- S.R. Bhowmik, M. Bhowmik, Entrepreneurship-A tool for Economic Growth And A key to Business Success, New Age International Publishers, First Edition, (formerly Wiley Eastern Limited), New Delhi, 2007

**Syllabus for B. Tech. III Year II semester
Information Technology
Open Elective-I
BIO INFORMATICS for CSIT**

Code: 101BT41	L	T	P/D	C
	2	2	-	2

UNIT I : SCOPE OF BIOINFORMATICS and BIOLOGICAL DATABASES

History, definition, importance and applications of bioinformatics, Introduction to biological data, Organization and management of databases, Nucleotide databases (Genbank,), Protein Databases(SWISS PROT)

UNIT II: SEQUENCE ALIGNMENT

Basic concepts of sequence homology Dynamic Programming, Dot Matrix analysis, Smith-Waterman Algorithm , Needleman-Wunsch Algorithm ,Scoring matrices: PAM and BLOSUM matrices

UNIT III: SEQUENCE-BASED DATABASE SEARCHES

BLAST and FASTA algorithms, various versions of basic BLAST and FASTA, Use of these methods for sequence analysis including the on-line use of the tools and interpretation of results.

UNIT IV : MULTIPLE SEQUENCE ALIGNMENT

Basic concepts of various approaches for MSA (e.g. progressive, hierarchical etc.). Algorithm of CLUSTALW and its application

UNIT V : PHYLOGENETIC ANALYSIS

Definition and description of phylogenetic trees. Distance based and character based methods of phylogenetic analysis .

UNIT VI : PROTEIN STRUCTURE PREDICTION

Secondary structure prediction methods, Algorithms of Chou Fasman, GOR methods. Protein homology modeling.

TEXT BOOKS:

1. Bioinformatics. David Mount, 2000. CSH Publications

REFERENCES:

1. Bioinformatics: A Machine Learning Approach P. Baldi. S. Brunak, MIT Press 1988.
2. Genomics and Proteomics-Functional and Computational aspects. Springer Publications. Editor-Sandor Suhai.
3. Bioinformatics- Methods and Protocols-Human Press. Stephen Misener, Stephen A. Krawetz.
4. Bioinformatics – A Practical guide to the Analysis of Genes and Proteins – Andreas D.Baxevanis, B.F. Francis Ouellette.

**Syllabus for B. Tech. III Year II semester
Information Technology
Open Elective-I
EMBEDDED and REAL TIME SYSTEMS**

Code: 101EM06

L T P/D C
2 2 - 2

UNIT – I

Introduction : Embedded systems overview, design challenge, processor technology, IC technology, Design Technology, Trade-offs. Single purpose processors RT-level combinational logic, sequential logic (RT-level), custom single purpose processor design (RT-level), optimizing custom single purpose processors.

UNIT – II

General Purpose Processors : Basic architecture, operation, Pipelining, Programmer's view, development environment, Application Specific Instruction-Set processors (ASIPs) – Micro controllers and Digital Signal Processors.

UNIT – III

State Machine and Consurrent Process Models : Introduction, models Vs, languages, finite state machines with data path model (FSMD), using state machines, program state machine model (PSM), concurrent process model, concurrent processes, communication among processes, synchronization among processes, implementation, data flow model, real-time systems.

UNIT – IV

Design Technology : Introduction, Automation, Synthesis, Parallel evolution of compilation and synthesis, Logic Synthesis, RT synthesis, Behavioral Synthesis, Systems Synthesis and Hardware/Software Co-Design, Verification, Hardware/Software co-simulation, Reuse of intellectual property codes.

UNIT – V

Introduction to Real-Time Systems : Tasks and Task States, Tasks and Data, Semaphores, and Shared Data; Message Queues, Mailboxes and Pipes, Timer Functions, Events, Memory Management, Interrupt Routines in and RTOS Environment.

UNIT – VI

Basic Design Using a Real-Time Operating System : Principles, Semaphores and Queues, Hard Real-Time Scheduling Considerations, Saving Memory and Power, An example RTOS like uC-OS (Open Source); Embedded Software Development Tools: Host and Target machines, Linker/Locators for Embedded Software, Getting Embedded Software into the Target System; Debugging Techniques: Testing on Host Machine, Using Laboratory Tools, An Example System.

TEXT BOOKS :

1. Embedded System Design – A Unifies Hardware/Software introduction - Frank Vahid, Tony D. Givargis, John Wiley, 2002.
2. Computers and Components, Wayne Wolf, Elseveir.

REFERENCES :

1. Embedded Systems, Raj Kamal, TMH.
2. An Embedded Software Primer, David E. Simon, Pearson Education.

**Syllabus for B. Tech. III Year II semester
Information Technology
Professional Elective - I
ADVANCED JAVA TECHNOLOGIES**

Code: 101IT16	L	T	P/D	C
	3	1	-	3

UNIT I: Java Servlets:

Java Servlets and Common Gateway Interface programming, Anatomy of Java Servlet, Reading Data and HTTP Request headers, Sending Data and HTTP Response Header, Working With Cookies. Java Server Pages: JSP Installation, JSP Tags, Tomcat, Request String, User Sessions, Cookies, Session Objects.

UNIT II: Java 2 Enterprise Edition Overview:

J2EE and J2SE. J2EE Multi-tier Architecture: Distributive Systems, the Tier, J2EE Multi-Tier Architecture, Client Tier Implementation, Web Tier Implementation, Enterprise JavaBeans Tier Implementation, Enterprise Information Systems Tier Implementation. J2EE Design patterns & Frameworks: The Pattern Concept, pattern Catalog.

UNIT III: J2EE Databases:

J2EE Database Concepts, JDBC Objects, JDBC and Embedded SQL. Java RMI: Remote Method Invocation Concept, Server Side, Client Side.

Struts Framework:

Struts Architecture, Struts classes – Action Forward, Action Form, Action Servlet, Action classes, Understanding struts- config. xml, Understanding Action Mappings, Struts flow with an example application, Struts Tiles Framework, Struts Validation Framework, Internationalizing Struts Application, Struts with Message Resources

UNIT IV : J2ME Overview:

Inside J2ME -How J2ME is organized, J2ME and Wireless Devices
Small Computing Technology: Wireless Technology-Mobile Radio Networks, Messaging, PDAs, Mobile Power, set Top Boxes, smart cards.J2ME Architecture and Development Environments:
J2ME Architecture, Small computing Device Requirements, MIDlet programming, J2ME Software Development Kits, Helloworld J2ME Style, J2ME Wireless Toolkit.

UNIT V: J2ME User Interfaces :

Commands, Items and Event Processing,-Display class, Command Class, Item Class, Exception handling. Overview of High-Level Display: Screens: Alert Class, Form Class, Item Class, List Class, Text Box Class. Overview of Low-Level Display: Canvas: The Canvas, User Interactions, and Graphics.

UNIT VI: J2ME Database Concepts:

Database Schema, Foreign keys, The Art of Indexing- Drawbacks of Using an Index, Clustered Keys, Derived Keys, Selective Rows. JDBC and Embedded SQL Introduction: tables, Indexing, Inserting Data into Tables-Insert a Row, Select All data ,Request Rows

and Columns. Metadata, Updating and Deleting Data from a table. Views: Rules for using Views Create a view, Group and Sort Views: Personal Information Manager: PIM Databases, The Contact databases, The Event databases, Error Handling.

TEXT BOOKS:

1. Jim Keogh, 'The Complete Reference J2EE'; TMH (for UNITS-I, II & III)
Subrahmanyam Allamaraju and Cedric Buest, 'Professional Java Server Programming:
- 2.J2EE 1.3 Edition, Apress publication, 2007.
- 3.James Keogh, 'J2ME: The Complete Reference', Tata McGraw-Hill, 2007.

REFERENCES:

1. 'Beginning J2EE 1.4' With foreword by Ivor Horton, Kevin Mukhar and James L. Weaver, Apress, 2004.

**Syllabus for B. Tech. III Year II semester
Information Technology
Professional Elective – I
ADVANCED COMPUTER ARCHITECTURE**

Code: 101CS18	L T P/D C
	3 1 - 3

UNIT - I

Fundamentals of Computer design- Technology trends- cost- Instruction set principles and examples- classifying instruction set- memory addressing- type and size of operands- addressing modes -operations in the instruction set- instructions for control flow- encoding an instruction set.-the role of compiler

UNIT - II

Instruction level parallelism (ILP)- over coming data hazards- reducing branch costs –high performance instruction delivery- hardware based speculation- limitation of ILP

UNIT - III

ILP software approach- compiler techniques- static branch protection - VLIW approach - H.W support for more ILP at compile time- H.W verses S.W Solutions

UNIT - IV

Memory hierarchy design- cache performance- reducing cache misses penalty and miss rate – virtual memory- protection and examples of VM.

UNIT - V

Multiprocessors and thread level parallelism- symmetric shared memory architectures- distributed shared memory- Synchronization- multi threading.

UNIT - VI

Storage systems- Types – Buses - RAID- errors and failures- bench marking a storage device- designing a I/O system.
interconnection network media – practical issues in interconnecting networks.

TEXT BOOKS

1. Computer Architecture A quantitative approach 3rd edition John L. Hennessy & David A. Patterson Morgan Kufmann (An Imprint of Elsevier)

REFERENCES

1. “Computer Architecture and parallel Processing” Kai Hwang and A.Briggs International Edition McGraw-Hill.
2. Advanced Computer Architectures, Dezso Sima, Terence Fountain, Peter Kacsuk, Pearson.
3. Parallel Computer Architecture, A Hardware / Software Approach, David E. Culler, Jaswinder Pal singh with Anoop Gupta, Elsevier

**Syllabus for B. Tech. III Year II semester
Information Technology
Professional Elective – I
MIDDLE WARE TECHNOLOGIES**

Code: 101IT08	L T P/D C
	3 1 - 3

UNIT-I

Introduction to client server computing: Evolution of corporate computing models from centralized to distributed computing, client server models. Benefits of client server computing, pitfalls of client server programming.

UNIT-II

CORBA with Java: Review of Java concept like RMI, RMI API, JDBC. Client/Server CORBA-style, The object web: CORBA with Java.

UNIT III

Introducing C# and the .NET Platform; Understanding .NET Assemblies; Object – Oriented Programming with C#; Callback Interfaces, Delegates, and Events.

UNIT IV

Building c# applications: Type Reflection, Late Binding, and Attribute-Based Programming; Object Serialization and the .NET Remoting Layer; Data Access with ADO.NET; XML Web Services.

UNIT V

Enterprise Beans: Definition, types, Session beans: types, Message driven beans, Accessing enterprise beans: local clients, remote clients, web service clients, method parameters and access, contents of an enterprise bean, naming conventions, the life cycles of enterprise beans, examples.

UNIT VI

Contexts and Dependency Injection: overview, beans as injectable objects, using qualifiers, injecting beans, using scopes, giving beans EL names, adding setter and getter methods, using a managed bean in a facelets page, injecting objects by using producer methods, examples.

TEXT BOOKS :

Client/Server programming with Java and CORBA Robert Orfali and Dan Harkey, John Wiley & Sons, SPD 2nd Edition
The Java EE 6 Tutorial: Basic Concepts (4th Edition) (Java Series), Prentice Hall; 4 edition (September 6, 2010), Eric Jendrock, Debbie Carson, Ian Evans, Devika Gollapudi, Kim Haase, Chinmayee Srivathsa
C# and the .NET Platform Andrew Troelsen, Apress Wiley-dreamtech, India Pvt Ltd

**Syllabus for B. Tech. IV Year I semester
Information Technology
MANAGEMENT SCIENCE
(Common to all branches)**

Code: 101MB02

L	T	P/D	C
3	1	-	3

UNIT – I: INTRODUCTION TO MANAGEMENT:

Management- Definitions, Levels of Management, functions of management Planning: types of planning, planning process; Organizing: Organizational Design and structure, staffing; Directing; Maslow’s Motivational theory, Leadership styles, Controlling: Basic control process.

UNIT – II: INTRODUCTION TO OPERATIONS MANAGEMENT:

Plant Location, plant layout, types of production, Work Study, Method study and Work Measurement, Basic Procedures, Project Management: Network Analysis - Programme Evaluation and Review Techniques, Critical Path Method, Crashing of Simple Networks.

UNIT – III: MATERIALS MANAGEMENT:

Objectives of Materials, Need for Inventory Control, Economic Order Quantity, ABC Analysis, Inventory Control Systems, Just In Time, Introduction to LSCM, Quality Control Techniques – Inspection, ISO standards, Six Sigma.

UNIT - IV:

(i) Human Resources Management: Objectives of HRM, Challenges of HRM, HR Planning process, HR functions and policies – Recruitment, Selection, Training and Development, Performance Appraisal, Assessment of HR requirements.

(ii) Marketing Management: Concept of Marketing, Functions, Marketing Mix, Product Life Cycle, Marketing Strategies, Channels of Distribution, Differences between products and services

UNIT – V: INTRODUCTION TO ORGANIZATIONAL BEHAVIOUR:

Definition, Nature and Scope, Perception – Perceptual selectivity and organization, Personality and Attitudes - Personality as a continuum – Meaning of personality, Communication – types - interactive communication in organizations –barriers to communication and strategies to improve the follow of communication.

UNIT - VI: STRATEGY AND MANAGEMENT CONTROL SYSTEM:

Concepts in Strategic Management, Vision, Mission, Objectives, SWOT Analysis, Concept of Strategic Planning, Competitive Advantage, Concept of Core Competence. An overview, Process and its Implementation, Target Setting, Balanced Score Card, Management Control in Empowered Organization – Conflict between Creativity and Control.

REFERENCES:

- 1 Dr. Y. Satyanarayana: Management control systems in competitive environment, Icfai books.
2. A R Aryasri: Management Science, Tata Mc Graw Hill
3. Koontz & Weihrich: Essentials of Management, 6/e, TMH, 2005
4. Kotler Philip & Keller Kevin Lane: Market Management 12/e, PHI, 2005
5. Strategic Management, Text and Cases, VSP Rao, V Hari Krishna
6. Thomas N Duening & John M. Ivancevich Management – Principles and Guidelines, Biztantra, 2003.

**Syllabus for B. Tech. IV Year I semester
Information Technology
INFORMATION SECURITY**

	L	T	P/D	C
Code: 101IT11	3	1	-	3

UNIT - I

Security Attacks (Interruption, Interception, Modification and Fabrication), Security Services (Confidentiality, Authentication, Integrity, Non-repudiation, access Control and Availability) and Mechanisms, A model for Internetwork Security, Internet Standards and RFCs.

UNIT - II

Conventional Encryption Principles, Conventional encryption algorithms: DES, TDES, AES, cipher block modes of operation, location of encryption devices, key distribution, Approaches of Message Authentication, Secure Hash Functions: SHA1 and HMAC. Public key cryptography principles, public key cryptography algorithms: RSA, DIFFIE HELL MAN, digital signatures, digital Certificates, Certificate Authority and key management
Kerberos, X.509 Directory Authentication Service.

UNIT - III

Email privacy: Pretty Good Privacy (PGP) and S/MIME.

UNIT - IV

IP Security Overview, IP Security Architecture, Authentication Header, Encapsulating Security Payload, Combining Security Associations and Key Management.

UNIT – V

Web Security Requirements, Secure Socket Layer (SSL) and Transport Layer Security (TLS), Secure Electronic Transaction (SET).
Intruders, Viruses and related threats.

UNIT - VI

Firewall Design principles, Trusted Systems. Intrusion Detection Systems.

TEXT BOOKS :

1. Network Security Essentials (Applications and Standards) by William Stallings Pearson Education.
2. Hack Proofing your network by Ryan Russell, Dan Kaminsky, Rain Forest Puppy, Joe Grand, David Ahmad, Hal Flynn Ido Dubrawsky, Steve W.Manzuik and Ryan Permech, wiley Dreamtech

REFERENCES :

1. Fundamentals of Network Security by Eric Maiwald (Dreamtech press)
2. Network Security - Private Communication in a Public World by Charlie Kaufman, Radia Perlman and Mike Speciner, Pearson/PHI.
3. Cryptography and network Security, Third edition, Stallings, PHI/Pearson
4. Principles of Information Security, Whitman, Thomson.
5. Network Security: The complete reference, Robert Bragg, Mark Rhodes, TMH
6. Introduction to Cryptography, Buchmann, Springer.

**Syllabus for B. Tech. IV Year I semester
Information Technology
SOFTWARE QUALITY ASSURANCE and TESTING**

	L	T	P/D	C
Code: 101CS09	3	1	-	3

UNIT - I

SQA framework, Software Quality Assurance, Components of Software Quality assurance, software Quality Assurance plan, Steps to develop and implement a SQA plan, Quality standards: ISO standards, CMM, CMMI, PCMM, Malcom Balridge, Malcom Balridge

UNIT - II

Metrics and Measurements introduction, product quality metrics, In-process Quality Metrics, Metrics for Software maintenance, Examples of Metric programs, Software Quality metrics methodology, Establish quality requirements, Identify software quality metrics, Implement the software quality metrics, Analyze software metrics results, Validate the software quality metrics.

UNIT - III

Software testing strategy and Environment, Establishing testing policy, structured approach to testing, Test factors, Economics of SDLC testing.

UNIT - IV

Software Testing Methodology, Defects hard to find, Verification and validation, Functional and structural, Workbench concept, Eight Consideration of software testing methodology, testing tactics checklist.

UNIT - V

Software Testing Techniques, Black-box, Boundary value, Bottomup, Branch coverage, Cause Effect graphing, CRUD, Database, Histogram, Graybox, Inspections, JADs, Pareto Analysis , Prototyping , Random Testing, Risk based testing , Regression Tasting, Structured walkthroughs, Thread testing , Performance testing, White box testing

UNIT - VI

Graph matrices and application: Motivational overview, matrix of graph, relations, power of a matrix, node reduction algorithm.
Exposure to Software Testing Tools: Load Runner, Win runner and QTP.

TEXT BOOKS

1. Effective Methods for Software Testing , 2nd Edition by William E.Perry, Wiley publications.
2. Software Quality, by Mordechai Ben-Menachem/ Gray S.Marliss By Thomson learning publications
3. Software Testing and continuous Quality Improvement, by William E.Lewis,Gunasekaran,2nd Edition Auerbach publications
4. Metrics and Models for Software Quality Engineering by Stephen H.Kan by Pearson Education Publications
5. Software testing techniques – Boris Beizer, Dreamtech, second edition.
6. Software testing tools – by Dr. K.V.K.K Prasad Dreamtech

REFERENCES

- Software Testing Techniques ,by Borjes Beizer, Second Edition,Dreamtech Press
- Testing and Quality Assurance for Component based software ,by Gao,Tsao and Wu,Artech House Publishers
- Managing the Testing Process,by Rex Black,Wiley.
- Handbook of Software Quality Assurance, by G.Gordon Schulmeyer,James I.McManus,2nd Edition,International Thomson Computer Press.

**Syllabus for B. Tech. IV Year I semester
Information Technology
WEB TECHNOLOGIES**

	L	T	P/D	C
Code: 101IT09	4	1	-	4

UNIT-I: Introduction to HTML, XML: Document type definition, XML Schemas, Document Object model, Presenting XML, Using XML Processors: DOM and SAX.

UNIT-II: Introduction to Java Scripts, Objects in Java Script, Dynamic HTML with Java Script

UNIT-III: PHP Basics – Features, Embedding PHP Code in your Web pages, Outputting the data to the browser, Datatypes, Variables, Constants, expressions, string interpolation, control Structures. Function, Creating a Function, Function Libraries, Arrays, Strings and Regular Expressions.

UNIT-IV: Web Servers and Servlets: Installing the Java Software Development Kit, Tomcat Server & Testing Tomcat, Introduction to Servlets: Lifecycle of a Servlet, JSDK, The Servlet API, The javax.servelet Package, Reading Servlet parameters, Reading Initialization parameters. The javax.servelet HTTP package, Handling Http Request & Responses, Using Cookies-Session Tracking, Security Issues.

UNIT-V: Introduction to JSP: The Problem with Servlet. The Anatomy of a JSP Page, JSP Processing: JSP Application Design with MVC Setting Up and JSP Environment, JSP Application Development: Generating Dynamic Content, Using Scripting Elements Implicit JSP Objects.

UNIT-VI: Database Access: Database Programming using JDBC, Studying Javax.sql.* package, Accessing a Database from a JSP Page, Application – Specific Database Actions, Introduction to struts framework.

TEXT BOOKS:

1. Web Programming, building internet applications, Chris Bates 2nd edition, WILEY Dreamtech (UNIT s 1,2)
2. PHP-Wrox Publications(UNIT s 3)
3. Java Server Pages –Hans Bergsten, SPD O’Reilly (UNITs 4,5,6)

REFERENCE BOOKS:

1. Programming world wide web-Sebesta,Pearson
2. Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES By Marty Hall and Larry Brown Pearson
3. Internet and World Wide Web – How to program by Dietel and Nieto PHI/Pearson Education Asia.
4. Jakarta Struts Cookbook , Bill Siggelkow, S P D O'Reilly for chap 8.
5. Murach's beginning JAVA JDK 5, Murach, SPD
6. An Introduction to web Design and Programming –Wang-Thomson
7. Web Applications Technologies Concepts-Knuckles,John Wiley
8. Programming world wide web-Sebesta,Pearson
9. Web Warrior Guide to Web Programmimg-Bai/Ekedaw-Thomas
10. Beginning Web Programming-Jon Duckett WROX.
11. Java Server Pages, Pekowsky, Pearson.

**Syllabus for B. Tech. IV Year I semester
Information Technology
LOGICAL REASONING- II
(Common to all branches)**

Code: 101MA73	L	T	P/D	C
	-	-	2	2

UNIT – I

Data Sufficiency: Problems in which a question on any topic such as Coding – Decoding, Blood Relations, Directions, Arithmetical Reasoning etc.

UNIT – II

Puzzle Test: Classification Type Questions, Seating Arrangements Comparison Type Questions, Sequential Order of Things, Selection Based on given conditions, Family – Based Puzzles, Jumbled Problems.

UNIT – III

Assertions and Reason – Logical Venn Diagrams – Alpha Numeric Sequence Puzzle.

UNIT – IV

Cubes and Dice – Analytical Reasoning

UNIT – V

Logical Deduction: Logic, Statement – Arguments, Statement – Assumptions, Statement – Conclusions, Deriving Conclusions from Passages.

UNIT – VI

Clocks & Calendar.

TEXT BOOKS: Verbal and Non Verbal Reasoning by R.S.Agarwal.

**Syllabus for B. Tech. IV Year I semester
Information Technology
SOFTWARE TESTING LAB**

	L	T	P/D	C
Code: 101CS79	-	-	3	2

1. Write programs in 'C' Language to demonstrate the working of the following constructs:
 i) do...while ii) while...do iii) if ...else iv) switch v) for
2. "A program written in 'C' language for matrix multiplication fails" Introspect the causes for its failure and write down the possible reasons for its failure.
3. Take any system (e.g. ATM system) and study its system specifications and report the various bugs.
4. write the test cases for any known application(e.g. banking application)
5. Create a test plan document for any application(e.g. library management system)
6. Study of testing tool(e.g. win runner)
7. Study of testing tool (QTP)
8. Study of any bug tracking tool(e.g.Bugzilla,bugbit)
9. Study of Load runner.

**Syllabus for B. Tech. IV Year I semester
Information Technology
WEB TECHNOLOGIES LAB**

Code: 101IT82	L	T	P/D	C
	-	-	3	2

To create a fully functional website with mvc architecture. To develop an online Book store using we can sell books (Ex amazon .com).

Hardware and Software required :

- 1. A working computer system with either Windows or Linux
- 2. A web browser either IE or firebox
- 3. Tomcat web server and Apache web server
- 4. XML editor like Altova Xml-spy [www.Altova.com/XMLSpy – free] , Stylusstudio , etc.,
- 5. A database either Mysql or Oracle
- 6. JVM(Java virtual machine) must be installed on your system

Week-1:

Design the following static web pages required for an online book store web site.

1) **HOME PAGE:**

The static home page must contain three **frames**.

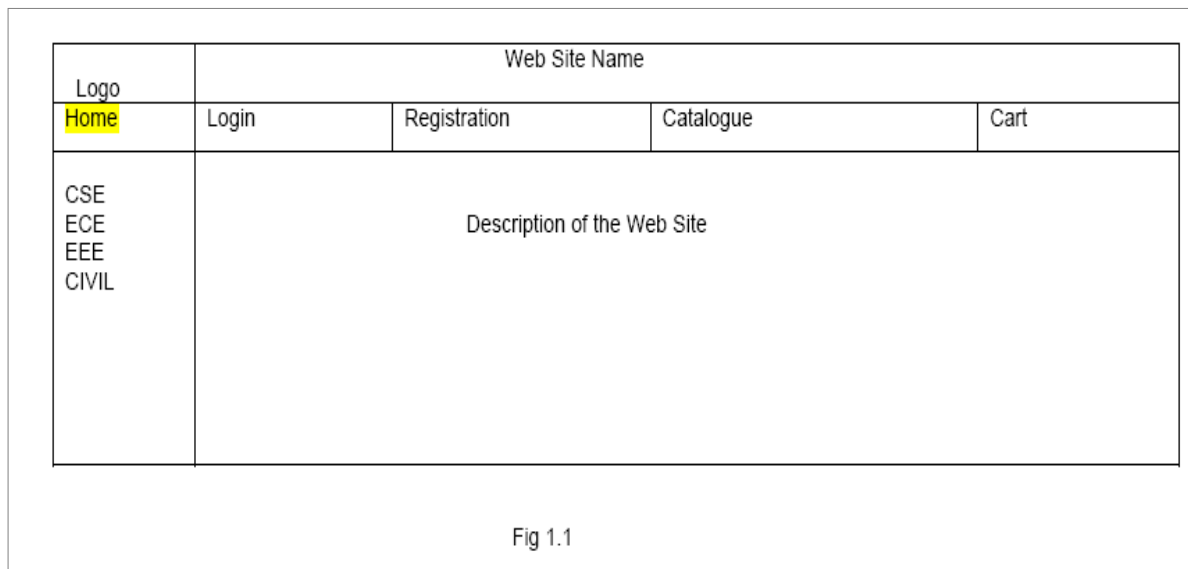
Top frame: Logo and the college name and links to Home page, Login page, Registration page,

Catalogue page and Cart page (the description of these pages will be given below).

Left frame : At least four links for navigation, which will display the catalogue of respective links.

For e.g.: When you click the link “CSE” the catalogue for CSE Books should be displayed in the Right frame.

Right frame: The pages to the links in the left frame must be loaded here. Initially this page contains description of the web site.



2) LOGIN PAGE:

This page looks like below:









Logo	Web Site Name			
Home	Login	Registration	Catalogue	Cart
CSE ECE EEE CIVIL	Login : <input type="text"/> Password: <input type="password"/> <input type="button" value="Submit"/> <input type="button" value="Reset"/>			

3) CATALOGUE PAGE:

The catalogue page should contain the details of all the books available in the web site in a table.

The details should contain the following:

1. 1. Snap shot of Cover Page.
2. 2. Author Name.
3. 3. Publisher.
4. 4. Price.
5. 5. Add to cart button.

Logo	Web Site Name			
Home	Login	Registration	Catalogue	Cart
CSE	   	Book : XML Bible Author : Winston Publication : Wiley	\$ 40.5	
ECE		Book : AI Author : S.Russel Publication : Princeton hall	\$ 63	
EEE		Book : Java 2 Author : Watson Publication : BPB publications	\$ 35.5	
CIVIL		Book : HTML in 24 hours Author : Sam Peter Publication : Sam publication	\$ 50	

4) CART PAGE:

The cart page should look like this:

Logo	Web Site Name			
Home	Login	Registration	Catalogue	Cart
CSE	Book name	Price	Quantity	Amount
ECE	Java 2	\$35.5	2	\$70
EEE	XML bible	\$40.5	1	\$40.5
CIVIL			Total amount -	\$130.5

5) REGISTRATION PAGE:

Create a “registration form “with the following fields

- 1) Name (Text field)
- 2) Password (password field)
- 3) E-mail id (text field)
- 4) Phone number (text field)
- 5) Sex (radio button)
- 6) Date of birth (3 select boxes)
- 7) Languages known (check boxes – English, Telugu, Hindi, Tamil)

8) Address (text area)

WEEK 2:

Design a web page using CSS (Cascading Style Sheets) which includes the following:

1) Use different font, styles:

In the style definition you define how each selector should work (font, color etc.). Then, in the body of your pages, you refer to these selectors to activate the styles.

For example:

```
<HTML>
<HEAD>
<style type = "text/css">
B.headline {color:red; font-size:22px;font-family:arial;text-decoration:underline}
</style>
<HEAD>
<BODY>
<b>This is normal boild</b><br>
Selector{cursor:value }
```

```

<HTML>
<HEAD>
<style type="text/css">
B.headline {color:red; font-size:22px; font-family:arial; text-decoration:underline}
</style>

</HEAD>

<BODY>
<b>This is normal bold</b><br>
Selector {cursor:value}

For example:

<html>
<head>
<style type="text/css">
.xlink {cursor:crosshair}
.hlink{cursor:help}
</style>
</head>

<body>
<b>
<a href="mypage.htm" class="xlink">CROSS LINK</a>
<br>
<a href="mypage.htm" class="hlink">HELP LINK</a>
</b>
</body>
</html>

<b class="headline">This is headline style bold</b>
</BODY>

</HTML>

```

2) Set a background image for both the page and single elements on the page. You can define the background image for the page like this:

```
BODY {background-image:url(myimage.gif);}
```

3) Control the repetition of the image with the background-repeat property.

As background-repeat: repeat

Tiles the image until the entire page is filled, just like an ordinary background image in plain HTML.

4) Define styles for links as

A:link

A:visited

A:active

A:hover

Example:

```
<style type="text/css">
```

```
A:link {text-decoration: none}
```

```
A:visited {text-decoration: none}
```

```
A:active {text-decoration: none}
```

```
A:hover {text-decoration: underline; color: red;}
</style>
```

5) Work with layers:

For example:

LAYER 1 ON TOP:

```
<div style="position:relative; font-size:50px; z-index:2;">LAYER 1</div>
```

```
<div style="position:relative; top:-50; left:5; color:red; font-size:80px; z- index:1">LAYER 2</div>
```

LAYER 2 ON TOP:

```
<div style="position:relative; font-size:50px; z-index:3;">LAYER 1</div>
```

```
<div style="position:relative; top:-50; left:5; color:red; font-size:80px; z- index:4">LAYER 2</div>
```

6) Add a customized cursor:

```
Selector {cursor:value}
```

For example:

```
<html>
<head>
<style type="text/css">
.xlink {cursor:crosshair}
.hlink{cursor:help}
</style>
</head>

<body>
<b>
<a href="mypage.htm" class="xlink">CROSS LINK</a>
<br>
<a href="mypage.htm" class="hlink">HELP LINK</a>
</b>
</body>
</html>
```

WEEK 3:

Write an XML file which will display the Book information which includes the following:

- 1) Title of the book
- 2) Author Name
- 3) ISBN number
- 4) Publisher name
- 5) Edition
- 6) Price

Write a Document Type Definition (DTD) to validate the above XML file.

Display the XML file as follows.

The contents should be displayed in a table. The header of the table should be in color GREY. And the Author names column should be displayed in one color and should be capitalized and in bold. Use your own colors for remaining columns.

Use XML schemas XSL and CSS for the above purpose.

Note: Give at least for 4 books. It should be valid syntactically.

Hint: You can use some xml editors like XML-spy

WEEK 4:

1. Write a PHP code for reversing a String by Word or Byte.
2. Write a PHP code for printing the date or time in defined format.
3. Write a PHP code for reversing a given array of elements.
4. Write a PHP program for sorting multiple array.

WEEK 5:**VALIDATION:**

Write JavaScript to validate the following fields of the above registration page.

1. Name (Name should contains alphabets and the length should not be less than 6 characters).
2. Password (Password should not be less than 6 characters length).
3. E-mail id (should not contain any invalid and must follow the standard

pattern

name@domain.com)

4. Phone number (Phone number should contain 10 digits only).

Note : You can also validate the login page with these parameters.

WEEK-6:

- 1) Install TOMCAT web server and APACHE.

While installation assign port number 4040 to TOMCAT and 8080 to APACHE. Make sure that these ports are available i.e., no other process is using this port.

- 2) Access the above developed static web pages for books web site, using these servers by putting the web pages developed in week-1 and week-2 in the document root. Access the pages by using the urls : <http://localhost:4040/rama/books.html> (for tomcat) <http://localhost:8080/books.html> (for Apache)

WEEK-7:

User Authentication :

Assume four users user1,user2,user3 and user4 having the passwords pwd1,pwd2,pwd3 and pwd4 respectively. Write a servlet for doing the following.

1. Create a Cookie and add these four user id's and passwords to this Cookie.
2. Read the user id and passwords entered in the Login form (week1) and authenticate with the values (user

id and passwords) available in the cookies.

If he is a valid user(i.e., user-name and password match) you should welcome him by name(user-name) else you should display “ You are not an authenticated user “.

Use init-parameters to do this. Store the user-names and passwords in the webinf.xml and access them in the servlet by using the getInitParameters() method.

WEEK-8:

Install a database(Mysql or Oracle).

Create a table which should contain at least the following fields: name, password, email-id, phone number(these should hold the data from the registration form).

Practice 'JDBC' connectivity.

Write a java program/servlet/JSP to connect to that database and extract data from the tables and display them. Experiment with various SQL queries.

Insert the details of the users who register with the web site, whenever a new user clicks the submit button in the registration page (week2).

WEEK-9:

Write a JSP which does the following job:

Insert the details of the 3 or 4 users who register with the web site (week9) by using registration form. Authenticate the user when he submits the login form using the user name and password from the database (similar to week8 instead of cookies).

WEEK-10:

Create tables in the database which contain the details of items (books in our case like Book name , Price, Quantity, Amount)) of each category. Modify your catalogue page (week 2)in such a way that you should connect to the database and extract data from the tables and display them in the catalogue page using JDBC.

WEEK-11:

HTTP is a stateless protocol. Session is required to maintain the state.

The user may add some items to cart from the catalog page. He can check the cart page for the selected items. He may visit the catalogue again and select some more items. Here our interest is the selected items should be added to the old cart rather than a new cart. Multiple users can do the same thing at a time(i.e., from different systems in the LAN using the ip-address instead of local host). This can be achieved through the use of sessions. Every user will have his own session which will be created after his successful login to the website. When the user logs out his session should get invalidated (by using the method session. invalidate ()).

Modify your catalogue and cart JSP pages to achieve the above mentioned functionality using sessions.

Syllabus for B. Tech. IV Year I semester
Information Technology
BANKING OPERATIONS, INSURANCE and RISK MANAGEMENT
(Common to all branches)

Code: 101MB56	L	T	P/D	C
	3	-	-	3

UNIT I:**INTRODUCTION TO BANKING BUSINESS:**

Banking Sectors- Retail, Corporate, Rural, and International; Non-banking financial intermediaries; Types of advances and deposits in a bank, New Dimensions and Products. - Credit, Debit and Smart Cards, and e-Banking Structure of the Indian Banking System's. Commercial Banks – Public and Private Sector and Foreign Banks. Cooperative Banks.

UNIT II:**BANKING REFORMS AND REGULATION:**

Banking Regulation Act, 1949, Reserve Bank of India Act 1934, and Reserve Bank's Instruments of Credit Control. Deficiencies in Indian Banking including Problems Accounts and Non-Performing Assets, Banking Sector Reforms.

UNIT III:**INSURANCE:**

Need for and importance of insurance, branches of insurance (life and general insurance) policy and procedure.

UNIT IV:**INSURANCE BUSINESS ENVIRONMENT:**

Mathematical basis of life insurance, reinsurance coverage, regulatory and legal frame work governing the insurance, business and economics of insurance, need for changing mindset; Latest trends.

UNIT V:**INTRODUCTION TO RISK**

Types of Risks facing Business and Individuals, Risk Management Process, Risk Management Methods, Risk Identification and Measurement, Risk Management Techniques: Non Insurance Methods.

UNIT VI:**INSURANCE AS A RISK MANAGEMENT**

Techniques Principles: Principle of Indemnity, Principle of Insurable Interest, Principle of Subrogation, Principle of utmost good Faith, Requisites of Insurable Risks, Requirements of an Insurance Contract, Distinguishes Characteristics of Insurance Contracts, Role of Agents and Brokers.

TEXT BOOKS

1. Varshney, P.N., Banking Law and Practice, Sultan Chand & Sons, New Delhi.
2. General principles of Insurance - Harding and Evanly
3. Mark S.Dorfman: Risk Management and Insurance, Pearson, 2009.

REFERENCES:

- Scott E. Harringam Gregory R. Nichaus: Risk Management & Insurance, , TMH, 2009.
- George E. Rejda: Principles of risk Management & Insurance, , 9/e, Pearson Education, 2009.
- G.Koteswar: Risk Management Insurance and Derivatives, Himalaya, 2008
- Gulati: Principles of Insurance Management, Excel, 2009
- James S Trieschmann, Robert E. Hoyt & David N. Sommer: Risk Management & Insurance, Cengage, 2009.
- Dorfman: Introduction to Risk Management and Insurance, 8/e,Pearson, 2009.
- P.K.Gupta: Insurance and Risk Management, Himalaya ,2009.
- Vivek & P.N. Asthana: Financial Risk Management, Himalaya,2009

**Syllabus for B. Tech. IV Year I semester
Information Technology
Open Elective- II
OPERATION RESEARCH**

Code: 101ME22	L	T	P/D	C
	3	-	-	3

UNIT – I

INTRODUCTION: Development – Definition– Characteristics and Phases – Types of models – operation Research models – applications.

LINEAR PROGRAMMING PROBLEM- Formulation – Graphical solutions, Simplex method, Artificial variables techniques -Two–phase method, Big-M method -Degeneracy, Duality Principle.

UNIT – II

TRANSPORTATION PROBLEM – Formulation – Optimal solution, unbalanced transportation problem – Degeneracy.

ASSIGNMENT PROBLEM – Formulation – Optimal solution - Variants of Assignment Problem-Unbalanced, Traveling Salesman problem.

UNIT – III

SEQUENCING – Introduction – Flow Shop sequencing – n jobs through two machines – n jobs through three machines – Job shop sequencing – two jobs through ‘m’ machines.

REPLACEMENT: Introduction – Replacement of items that deteriorate with time – when money value is not counted and counted – Replacement of items that fail completely, Group replacement.

UNIT – IV

THEORY OF GAMES: Introduction – Pure strategies-Minimax (maximin) – Criterion and optimal strategy – Solution of games with saddle points – Mixed Strategies-Rectangular games without saddle points- Dominance principle – 2 X 2 games , m X 2 & 2 X n games -Graphical method.

UNIT – V

WAITING LINES: Introduction – Single Channel – Poisson arrivals – exponential service times – with infinite population and finite population models– Multichannel – Poisson arrivals – exponential service times with infinite population single channel Poisson arrivals.

INVENTORY : Introduction – Single item Deterministic models without shortages– Single item inventory models with one price break and multiple price breaks – Stochastic models – demand may be discrete variable or continuous variable – Instantaneous production. Instantaneous demand and continuous demand and no set up cost.

UNIT – VI

SIMULATION: Definition – Types of simulation – phases of simulation– applications of simulation – Inventory and Queuing problems – Advantages and Disadvantages – Computers in Simulation.

DYNAMIC PROGRAMMING: Introduction – Bellman’s Principle of optimality – Applications of dynamic programming- shortest path problem -capital budgeting problem — linear programming problem.

TEXT BOOKS:

1. Operations research / Hira & Gupta
2. Operation Research /J.K.Sharma/MacMilan publishers.

REFERENCES:

1. Operations Research / S.D.Sharma/Kedarnath publishers
2. Operations research/V.K.Kapoor

**Syllabus for B. Tech. IV Year I semester
Information Technology
Open Elective- II
VLSI DESIGN**

	L	T	P/D	C
Code: 101EM07	3	-	-	3

UNIT-I

Introduction to IC Technology, IC fabrication process, Layout design rules, packaging integrated circuits

UNIT-II

Electrical characteristics of MOSFET, NMOS, CMOS and Bi-CMOS:Ids-vds relationships,MOS transistor threshold voltage,gm,gds,figure of merit, pass transistors,NMOS inverter, various pull-ups,CMOS inverter analysis and Design,BiCMOS inverters.

UNIT-III

Interconnects: parasitic estimation. Lumped and distributed models, transmission line model, interconnect layer sizing and scaling, power distribution design-clocking and timing issues.

UNIT-IV

CMOS inverter: static and dynamic behavior, CMOS combinational logic circuits: Static and dynamic CMOS Design.

UNIT-V

CMOS sequential logic circuits: static latches and registers, dynamic latches and registers
Data path Design: memory, control logic, system consideration, adders, multipliers, shifters, high density memory elements.

UNIT-VI

Digital system design implementation options: ASICs, PLDs, CPLDs, FPGAs.
CMOS Testing: Faults, Test generation, Design for Testability, Scan based design, BIST, BST.

TEXT BOOKS:

1. Jan M. Rabaey, A. Chandrakasan, and B. Nikolic, Digital Integrated Circuits: A design Perspective,Pearson Education, 2002
2. Wayne Wolf, Modern VLSI Design system on chip design, Prentice Hall of India, Third Edition 2005
3. Neil H. E. Weste and David Harris, Principles of CMOS VLSI Design, Second edition Pearson education, 2005

REFERENCES:

1. S.M.Kang & Y. Leblebici, CMOS Digital Integrated Circuits, McGraw Hill, 2002
2. John P.Uyemura, Introduction to VLSI Circuits and Systems,John Wiley

**Syllabus for B. Tech. IV Year I semester
Information Technology
Professional Elective - II
SOFTWARE PROJECT MANAGEMENT**

Code: 101CS12	L	T	P/D	C
	3	1	-	3

UNIT I: Introduction to Software Engineering:

The evolving role of software, Changing Nature of Software, Software myths. A Generic view of process: Software engineering- A layered technology, a process framework, The Capability Maturity Model Integration (CMMI), Process patterns, process assessment, personal and team process models. Process models: The waterfall model, Incremental process models, Evolutionary process models, The Unified process.

UNIT II: Software Requirements :

Functional and non-functional requirements, User requirements, System requirements, Interface specification, the software requirements document. Requirements engineering process: Feasibility studies, Requirements elicitation and analysis, Requirements validation, Requirements management.

UNIT III: System models:

Context Models, Behavioral models, Data models, Object models, structured methods. Design Engineering: Design process and Design quality, Design concepts, the design model. Creating an architectural design: Software architecture, Data design, Architectural styles and patterns, Architectural Design.

UNIT IV : Object-Oriented Design:

Objects and object classes, An Object-Oriented design process, Design evolution. Performing User interface design: Golden rules, User interface analysis and design, interface analysis, interface design steps, Design evaluation. Testing Strategies: A strategic approach to software testing, test strategies for conventional software, Black-Box and White-Box testing, Validation testing, System testing, the art of Debugging.

UNIT V :Product metrics :

Software Quality, Metrics for Analysis Model, Metrics for Design Model, Metrics for source code, Metrics for testing, Metrics for maintenance. Metrics for Process and Products : Software Measurement, Metrics for software quality. Risk management: Reactive vs. Proactive Risk strategies, software risks, Risk identification, Risk projection, Risk refinement, RMMM, RMMM Plan.

UNIT VI :Quality Management :

Quality concepts, Software quality assurance, Software Reviews, Formal technical reviews, Statistical Software quality Assurance, Software reliability, The ISO 9000 quality standards.

TEXT BOOKS

1. Software Engineering, A practitioner's Approach- Roger S. Pressman, 6th edition. McGrawHill International Edition.
2. Software Engineering- Sommerville, 7th edition, Pearson education.

REFERENCES

1. Software Engineering- K.K. Agarwal & Yogesh Singh, New Age International Publishers
2. Software Engineering, an Engineering approach- James F. Peters, Witold Pedrycz, John Wiely.
3. Systems Analysis and Design- Shely Cashman Rosenblatt, Thomson Publications.
4. Software Engineering principles and practice- Waman S Jawadekar, The McGraw-Hill Companies.

**Syllabus for B. Tech. IV Year I semester
Information Technology
Professional Elective - II
NEURAL NETWORKS FUZZY LOGIC**

	L	T	P/D	C
Code: 101IT10	3	1	-	3

UNIT – I: Characteristics of Neural Networks:

Historical Development of Neural Networks Principles, Artificial Neural Networks: Terminology, Models of Neuron, Topology, Basic Learning Laws, Pattern Recognition Problem, Basic Functional UNITS, Pattern Recognition Tasks by the Functional UNITS.

UNIT – II: Feedforward Neural Networks:

Introduction, Analysis of pattern Association Networks, Analysis of Pattern Classification Networks, Analysis of pattern storage Networks. Analysis of Pattern Mapping Networks.

UNIT – III: Feedback Neural Networks:

Introduction, Analysis of Linear Autoassociative FF Networks, Analysis of Pattern Storage Networks.

UNIT – IV: From Classical Sets to Fuzzy Sets: A Grand Paradigm Shift:

Introduction, Crisp Sets: An Overview, Fuzzy Sets: Basic Types, Fuzzy Sets: Basic Concepts, Characteristics and Significance of the paradigm Shift.

Fuzzy Sets Vs Crisp Sets:

Additional properties of α - Cuts, Representations of Fuzzy Sets, Extension Principle for Fuzzy Sets

UNIT – V: Operations on Fuzzy Sets:

Types of operations, Fuzzy Complements, Fuzzy intersections: t- Norms, Fuzzy Unions: t- Conorms, Combinations of Operations, Aggregation Operations.

Fuzzy Arithmetic: Fuzzy Numbers, Linguistic Variables, Arithmetic Operations on Intervals, Arithmetic Operations on Fuzzy Numbers, Lattice of Fuzzy Numbers, Fuzzy Equations.

UNIT-VI: Fuzzy Logic: Classical Logic: An Over View, Multivalued Logic, Fuzzy Prepositions, Fuzzy Quantifiers, Linguistic Hedges, Inference from Conditional Fuzzy Prepositions, Inference from Conditional and Quantified Prepositions, Inference from Quantified Prepositions,

TEXT BOOKS

1. Fuzzy Sets and Fuzzy Logic by George J. Klir/ Bo Yuan Printice Hall of India P Ltd.
2. Artificial neural networks – B. Vegnanarayana Printice Hall of India P Ltd.

REFERENCES :

1. Artificial Intelligence , 2nd Edition, E.Rich and K.Knight (TMH).

2. Artificial Intelligence and Expert Systems – Patterson PHI.
3. Expert Systems: Principles and Programming- Fourth Edn, Giarrantana/ Riley, Thomson.
4. PROLOG Programming for Artificial Intelligence. Ivan Bratka- Third Edition – Pearson Education.
5. Neural Networks Simon Haykin PHI
6. Artificial Intelligence, 3rd Edition, Patrick Henry Winston., Pearson Edition.

**Syllabus for B. Tech. IV Year I semester
Information Technology
Professional Elective - II
MOBILE COMPUTING**

Code: 101CS16	L	T	P/D	C
	3	1	-	3

UNIT – I : Introduction to Mobile Communications and Computing:

Mobile Computing (MC): Introduction to MC, novel applications, limitations, introduction to mobile architecture - UMTS, GSM.

Architecture GSM: Mobile services, System architecture, Radio interface, Protocols, Localization and calling, Handover, Security, and New data services.

UNIT – II: (Wireless) Medium Access Control:

Motivation for a specialized MAC (Hidden and exposed terminals, Near and far terminals), SDMA, FDMA, TDMA, CDMA.

UNIT – III: Mobile Network Layer:

Mobile IP (Goals, assumptions, entities and terminology, IP packet delivery, agent advertisement and discovery, registration, tunneling and encapsulation, optimizations), Dynamic Host Configuration Protocol (DHCP).

UNIT – IV: Mobile Transport Layer:

Traditional TCP, Indirect TCP, Snooping TCP, Mobile TCP, Fast retransmit/fast recovery, Transmission /time-out freezing, Selective retransmission, Transaction oriented TCP.

UNIT – V: Mobile Ad hoc Networks (MANETs):

Overview, Properties of a MANET, spectrum of MANET applications, routing algorithms.

Database: Hoarding techniques, caching invalidation mechanisms, client server computing with adaptation, data delivery mechanisms

UNIT – VI: Protocols and Tools:

Wireless Application Protocol-WAP. (Introduction, protocol architecture, and treatment of protocols of all layers), Bluetooth (User scenarios, physical layer, MAC layer, networking, security, link management), introduction to mobile operating systems- Android, javaOS(J2ME), syambian.

TEXT BOOKS

1. Jochen Schiller, “Mobile Communications”, *Addison-Wesley*. (Chapters 1, 2, 3, 4, 7, 8 and 9). Second edition, 2004.
2. Stojmenovic and Cacute, “Handbook of Wireless Networks and Mobile Computing”, *Wiley*, 2002, ISBN 0471419028. (Chapters 6, 11, 15, 17, 18, 19, 26 and 27)

REFERENCES

1. Reza Behravanfar, “Mobile Computing Principles: Designing and Developing Mobile Applications with UML and XML”, ISBN: 0521817331, Cambridge University Press, October 2004,
2. Adelstein, Frank, [Gupta, Sandeep KS](#), [Richard III, Golden](#) , [Schwiebert, Loren](#), “Fundamentals of Mobile and Pervasive Computing”, ISBN: 0071412379, McGraw-Hill Professional, 2005.
3. Hansmann, Merk, Nicklous, Stober, “Principles of Mobile Computing”, *Springer*, second edition, 2003.
4. Martyn Mallick, “Mobile and Wireless Design Essentials”, Wiley *DreamTech*, 2003
5. A. Tanenbaum “Computer Networks”, 4th edition.

**Syllabus for B. Tech. IV Year II semester
Information Technology
NETWORKS PROTOCOLS**

Code: 101IT15	L	T	P/D	C
	4	-	-	4

UNIT- 1 : IP Addressing:

Decimal Notation-Classes- special addresses - A simple Internet-Unicast and Broadcast addresses - Applying for IP addresses-Private networks.

Subnetting And Supernetting: Subnetting- Masking-Examples of Subnetting – Variable length Subnetting- Supernetting.

A Next Generation IP (IPv6) : Introduction, Features Of IPv6, General Form Of An IPv6 Datagram, IPv6 Base and Extension Header Format, IPv6 Address Types ,IPv6 Source Routing ,IPv6 Options.

UNIT-2: Internet Protocol:

Data gram-Fragmentation-Options- Checksum- IP design.ARP and RARP: ARP- ARP design – RARP

Internet Control Message Protocol: Types of Messages- Message formats- Error reporting- Query- Checksum- ICMP design. Testing Destination Reachability And Status (Ping)- Request And Reply Message Format- Route Change Requests From Routers- Reporting Other Problems.

Internet Group Management Protocols: Multicasting- IGMP-Encapsulation-Multicast Backbone- IGMP design.

UNIT-3: User Datagram Protocol:

Process to process communication-User datagram –Checksum- UDP operation- uses of UDP – UDP design.UDP Multiplexing, Demultiplexing, And Ports- Reserved And Available UDP Port Numbers

Transmission Control Protocol: Process to Process communication -TCP Services –Segment - Options- Checksum-Flow control- Error Control- TCP Timers-Connection-State Transition Diagram-Congestion Control-TCP operation- TCP Design. Ports, Connections, And Endpoints - Passive And Active Opens- Segments, Streams, And Sequence Numbers - UDP and TCP Ports.

UNIT-4 Application Layer and client-Server Model:

Client-server Model-Concurrency-Processes

BOOTP and DHCP: BOOTP-DHCP.

Domain Name System: Name Space-Domain name Space-Distribution of Name space-DNS in the Internet-Resolution- DNS Messages- Types of Records-Compression-DDNS Encapsulation.

TELNET AND RLOGIN: Concept-Network Virtual Terminal- NVT character set -Embedding-Options-Option Negotiation-Sub option Negotiation-Controlling Server-Out of Band signaling – Escape character-Mode of Operation-Examples- User Interface- Rlogin-Security Issue. Secure Shell (SSH) - SSH Protocol Architecture
– SSH Transport Layer Protocol– SSH User Authentication Protocol– SSH Connection Protocol.

UNIT-5: File Transfer Protocol:

Connections- Communication-Command Processing-File Transfer-User Interface-Anonymous FTP.

Trivial File Transfer Protocol: Messages- Connection- Data Transfer-UDP ports- TFTP Example-TFTP options -Security-Applications.

Hypertext Transfer Protocol: HTTP overview-Proxy-Gateway-Tunnel-Cache-Messages-General Header Fields-Cache Control-Connection-Request Methods-Request Header Fields-Response Messages-Response Header Fields-Entity Header Fields-Client/Server Authentication.

UNIT-6: Socket Interface:

Definitions-Sockets-Byte ordering- Address Transformation-Byte manipulation Function-Information about Remote Host- Socket System Calls- Connectionless Iterative server- UDP Client/Server Programs-Connection oriented Concurrent Server - TCPClient/Server Programs.

TEXT BOOK:

Internetworking with TCP/IP. D. E. Comer (PHI publications).

REFERENCE BOOK:

TCP/IP Protocol Suite. Behrouz A. Forouzan (TMH edition)

**Syllabus for B. Tech. IV Year II semester
Information Technology
Professional Elective – III
IMAGE PROCESSING**

Code: 101IT12	L	T	P/D	C
	4	-	-	4

UNIT – I: Introduction :

Examples of fields that use digital image processing, fundamental steps in digital image processing, components of image processing system.. Digital Image Fundamentals: A simple image formation model, image sampling and quantization, basic relationships between pixels

UNIT – II: Image enhancement in the spatial domain :

Basic gray-level transformation, histogram processing, enhancement using arithmetic and logic operators, basic spatial filtering, smoothing and sharpening spatial filters, combining the spatial enhancement methods

UNIT – III: Image restoration :

A model of the image degradation/restoration process, noise models, restoration in the presence of noise–only spatial filtering, Weiner filtering, constrained least squares filtering, geometric transforms; Introduction to the Fourier transform and the frequency domain, estimating the degradation function

UNIT – IV: Color Image Processing :

Color fundamentals, color models, pseudo color image processing, basics of full–color image processing, color transforms, smoothing and sharpening, color segmentation .

UNIT – V: Image Compression and Morphology :

Fundamentals, image compression models, error-free compression, lossypredictive coding, image compression standards, Morphological Image Processing : Preliminaries, dilation, erosion, open and closing, hit or miss transformation

UNIT – VI: Image Segmentation and Recognition :

Detection of discontinuous, edge linking and boundary detection, thresholding, region–based segmentation, Patterns and patterns classes, recognition based on decision–theoretic methods, matching, optimum statistical classifiers

TEXT BOOK :

1. Digital Image Processing, Rafeal C.Gonzalez, Richard E.Woods, Third Edition, Pearson Education/PHI.

REFERENCE BOOKS :

1. Image Processing, Analysis, and Machine Vision, Milan Sonka, Vaclav Hlavac and Roger Boyle, Second Edition, Thomson Learning.

2. Introduction to Digital Image Processing with Matlab, Alasdair McAndrew, Thomson Course Technology
3. Computer Vision and Image Processing, Adrian Low, Second Edition, B.S.Publications
4. Digital Image Processing, William K. Pratt, Wiley Third Edition
5. Digital Image Processing and Analysis, B. Chanda, D. Datta Majumder, Prentice Hall of India, 2003

**Syllabus for B. Tech. IV Year II semester
Information Technology
Professional Elective – III
E – COMMERCE**

Code: 101IT13	L	T	P/D	C
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UNIT - I

Electronic Commerce-Frame work, anatomy of E-Commerce applications, E-Commerce Consumer applications, E-Commerce organization applications.

UNIT - II

Consumer Oriented Electronic commerce - Mercantile Process models.

UNIT - III

Electronic payment systems - Digital Token-Based, Smart Cards, Credit Cards, Risks in Electronic Payment systems.

Approaches to Safe Electronic Commerce: Secure Transport Protocols, Secure Transactions, Secure Electronic Payment Protocol (SEEP), Secure Electronic Transaction (SET), Certificates for authentication Security on web Servers and Enterprise Networks.

UNIT-IV

Inter Organizational Commerce - EDI, EDI Implementation, Value added networks.

Intra Organizational Commerce - work Flow, Automation Customization and internal Commerce, Supply chain Management

UNIT - V

Corporate Digital Library - Document Library, digital Document types, corporate Data Warehouses. Advertising and Marketing - Information based marketing, Advertising on Internet, on-line marketing process, market research.

UNIT - VI

Consumer Search and Resource Discovery - Information search and Retrieval, Commerce Catalogues, Information Filtering.

Multimedia - key multimedia concepts, Digital Video and electronic Commerce, Desktop video processings, Desktop video conferencing.

TEXT BOOK :

1. E-Commerce fundamentals and applications Hendry Chan, Raymond Lee, Tharam Dillon, Ellizabeth Chang, John Wiley.

REFERENCES :

1. Frontiers of electronic commerce – Kalakata, Whinston, Pearson.
2. Web Commerce Technology Handbook – Daniel Minoli, Emma Minoli, McGraw-Hill
3. E-Commerce, S.Jaiswal – Galgotia.
4. E-Commerce, Efrain Turbon, Jae Lee, David King, H.Michael Chang.
5. Electronic Commerce – Gary P.Schneider – Thomson.
6. E-Commerce – Business, Technology, Society, Kenneth C.Taudon, Carol Guyerico Traver.

**Syllabus for B. Tech. IV Year II semester
Information Technology
Professional Elective – III
MULTIMEDIA**

	L	T	P/D	C
Code: 101IT14	4	-	-	4

UNIT-I

Fundamental concepts in Text and Image: Multimedia and hypermedia, world wide web, overview of multimedia software tools. Graphics and image data representation graphics/image data types, file formats, Color in image and video: color science, color models in images, color models in video.

UNIT-II

Fundamental concepts in video and digital audio: Types of video signals, analog video, digital video, digitization of sound, MIDI, quantization and transmission of audio.

UNIT-III

Multimedia data compression: Lossless compression algorithm: Run-Length Coding, Variable Length Coding, Dictionary Based Coding, Arithmetic Coding, Lossless Image Compression, Lossy compression algorithm: Quantization, Transform Coding, Wavelet-Based Coding, Embedded Zerotree of Wavelet Coefficients Set Partitioning in Hierarchical Trees (SPIHT).

UNIT-IV

Action Script I: ActionScript Features, Object-Oriented ActionScript, Datatypes and Type Checking, Classes, Authoring an ActionScript Class

UNIT-V

Action Script II : Inheritance, Authoring an ActionScript 2.0 Subclass, Interfaces, Packages, Exceptions

UNIT VI

Application Development: An OOP Application Frame work, Using Components with ActionScript MovieClip Subclasses.

TEXT BOOKS:

1. Fundamentals of Multimedia by Ze-Nian Li and Mark S. Drew PHI/Pearson Education.
2. Essentials ActionScript 2.0, Colin Moock, SPD O,REILLY.

REFERENCE BOOKS:

1. Digital Multimedia, Nigel chapman and jenny chapman, Wiley-Dreamtech
2. Macromedia Flash MX Professional 2004 Unleashed, Pearson.
3. Multimedia and communications Technology, Steve Heath, Elsevier(Focal Press).
4. Multimedia Applications, Steinmetz, Nahrstedt, Springer.
5. Multimedia Basics by Weixel Thomson.
6. Multimedia Technology and Applications, David Hilman , Galgotia.

**Syllabus for B. Tech. IV Year II semester
Information Technology
Professional Elective – III
NETWORK MANAGEMENT SYSTEM**

	L	T	P/D	C
Code: 101CS20	4	-	-	4

UNIT - I

Data communications and Network Management Overview : Analogy of Telephone Network Management, Communications protocols and Standards, Case Histories of Networking and Management, Challenges of Information Technology Managers, Network Management: Goals, Organization, and Functions, Network and System Management, Network Management System Platform, Current Status and future of Network Management.

UNIT - II

SNMPV1 Network Management : Organization and Information and Information Models.
Managed network : Case Histories and Examples, The History of SNMP Management, The SNMP Model, The Organization Model, System Overview, The Information Model.
SNMPv1 Network Management : Communication and Functional Models. The SNMP Communication Model, Functional model.

UNIT - III

SNMP Management: SNMPv2 : Major Changes in SNMPv2, SNMPv2 System Architecture, SNMPv2 Structure of Management Information, The SNMPv2 Management Information Base, SNMPv2 Protocol, Compatibility With SNMPv1.
SNMP Management : RMON : What is Remote Monitoring? , RMON SMI and MIB, RMON1, RMON2, ATM Remote Monitoring, A Case Study of Internet Traffic Using RMON

UNIT -IV

Telecommunications Management Network : Why TMN? , Operations Systems, TMN Conceptual Model, TMN Standards, TMN Architecture, TMN Management Service Architecture, An Integrated View of TMN, mplementation Issues.

UNIT - V

Network Management Tools and Systems:Network Management Tools, Network Statistics Measurement Systems, History of Enterprise Management, Network Management systems, Commercial Network management Systems, System Management, Enterprise Management Solutions.

UNIT - VI

Web-Based Management:NMS with Web Interface and Web-Based Management, Web Interface to SNMP Management, Embedded Web-Based Management, Desktop management Interface, Web-Based Enterprise Management, WBEM: Windows Management Instrumentation, Java management Extensions, Management of a Storage Area Network: , Future Directions.

TEXT BOOK :

1. Network Management, Principles and Practice, Mani Subrahmanian, Pearson Education.

REFERENCES :

1. Network management, Morris, Pearson Education.
2. Principles of Network System Administration, Mark Burges, Wiley Dreamtech.
3. Distributed Network Management, Paul, John Wiley.